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INFORMATION
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BY

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AUTHOR OF

A BOOK ABOUT THE BIBLE

AND

A BOOK ABOUT A THOUSAND THINGS



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INFORMATION ROUNDUP

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FIRST EDITION

C-X

TO
JESSE H. JONES



PREFACE

When arrangements for publishing this book were made I requested that four pages in the front be allotted for a preface. Just why I did this I don't recall. Now I must write enough to fill four pages.

I don't know why it is so, but when I sit down to write a preface I feel sort of sheepish. Perhaps something in the nature of prefaces causes this feeling. Prefaces are conventional devices, like greetings and salutations, and are seldom original. William Allan Neilson compared prefaces to curtain speeches and said they make even the most self-forgetful performers self-conscious.

Before writing this one I looked up the history of prefaces and some of the comments about them. *Preface* is from Latin *prae*, "before," and *fari*, "to speak," and literally means speaking before. The first book with a preface in the modern sense was printed at Rome in 1469. It was an edition of the *Golden Ass* and other writings of the second-century Latin author Lucius Apuleius. But I find that long before the invention of printing writers prefixed to books statements equivalent to prefaces. In olden times the preface was an advertisement written by the author to induce people to buy and read his book. Today such matter, known as blurb, is printed on what is called the jacket in America and the dust cover in England. In the nineteenth century, writers with a predilection for words of Anglo-Saxon lineage began to substitute *foreword* for *preface*.

Formerly authors took their prefaces very seriously. George Borrow, more than a century ago, lamented that it is very seldom that the preface of a work is read. "Presumption or meanness are both too often the only article to be discovered in a preface," wrote George Crabbe. "Whilst one author haughtily affects to despise the public attention, another timidly courts it." John Keats said: "A preface is written to the public—a thing I cannot help looking upon as an enemy, and which I cannot address without feelings of hostility." But the sensitive poet of twenty-three was hardly representative of authors in their attitude toward the public. I like better Charles Lamb's, "A preface is nothing but a talk with the reader."

The preface evolved into a brief explanation of the subject, purpose, scope, method of treatment and sources. My reason for writing this

book was to give reliable and adequate answers to many questions which are often asked but which refuse to stay answered. I have tried to make it a treasure chest of interesting and authentic information about many things.

Some have kindly referred to my work as scholarly. I am not a scholar in the generally accepted sense of the word; I am merely a student with an impulse to share with others the results of my studies. Others, with good intentions, have called me a "walking encyclopedia"; but I think of myself as an information detective. I do not pretend to be an authority on the subjects I write about. Nobody could have complete information about so many things. Neither am I like Mark Twain, who wrote: "Information appears to stew out of me naturally, like the precious otter of roses out of the otter." I inquire and search diligently and then try to report the facts objectively and accurately. My chief aids are industry and interest rather than a remarkable memory and a wide knowledge. As a rule I do not publish my findings until I have considered them for a long time. Each subject is approached on the assumption that the reader knows no more about it than I did when I first began to investigate it.

It would take up too much space and be too much work to tell where I got the material for this book, which is one of the by-products of thirty years of reading, conversation and observation. To paraphrase Shakespeare's Henry Bolingbroke, "God knows by what by-paths and indirect crook'd ways I met this information." Virtually every sentence is from a different source and often a single sentence is from several sources. The difference between plagiarism and research has been defined like this: "If a writer takes it from one source, it is plagiarism; if he takes it from more than one source, it is research." Conversation is often overlooked as a source of knowledge. It has been my happy lot to have many friends and acquaintances who are good conversationalists. I have dispensed with footnotes, bibliographies, appendices and such formidable appendages of scholarship. Sources and authorities, when reference to them is necessary, are incorporated in the body of the text.

Nearly two thousand years ago Plutarch complained that he had to write his *Parallel Lives* in a little town in Greece, far from the books and authorities he wanted to consult. I have been more fortunate. Many years ago I established myself within a block of the Library of Congress, the largest collection of working books and manuscripts in the world. In addition I have had the privilege of associating with people proficient in many branches of learning and science. It is

impracticable to name the many individuals who have contributed directly or indirectly to the making of this book, but I cannot pass by this opportunity to mention one, a friend with whom I have discussed many of these subjects to the advantage of the book—Rex Lampman.

Centuries ago dedications and prefaces were combined. In those days writers dedicated their books to persons whose patronage they sought. As late as the seventeenth century many books were written for the sole purpose of dedicating them. The person to whom the book was dedicated was expected to give the author a purse of gold. Some authorities suspect that even Shakespeare received a handsome sum from Lord Southampton to whom he dedicated *Venus and Adonis* and *The Rape of Lucrece*. Edward Young alluded to this practice when he said, "A dedication is a wooden leg." Later the finer custom grew up of dedicating a book to a relative, a friend or one who had helped the author, and dedications came to be expressions of esteem and gratitude. I have dedicated this one to my friend Jesse H. Jones.

In this book I have sought authenticity rather than novelty and accuracy rather than style. Often I have had to sacrifice a "good story" in the interest of correct information. More than once I have had to revise my work and sometimes to reverse former conclusions.

Information Roundup is, in a sense, the third in a series of which *A Book about the Bible* and *A Book about a Thousand Things* are the first and second, although each volume is entirely separate and independent and does not duplicate any part of the others. Some of the material in this book has been previously published during the last twenty-five years, but all such material has been brought up to date and rewritten.

It no doubt will be objected by some that this book is without logical order in arrangement. Naturally I have thought a great deal about this. An alphabetical arrangement would be meaningless, and a topical grouping would be little better. Accordingly I present the subjects in the haphazard way they arise. This should add to the interest of the general reader. The index at the end of the book is the true key to its contents. To collect information and then ask questions about it would be easy. The trouble is that nowadays too many questions are being answered that have never been asked. It is the questions of other people that I am trying to answer. These questions for the most part come up again and again and won't stay down. That accounts for the detail in which I answer many of them. Readers won't take "yes" or "no" for an answer. They want to know

"how come." There are questions that pop up unexpectedly in conversation, at the family dinner table, among a group of friends, at H. O. Bishop's Round Table in the National Press Club, at a party of hunters or fishermen, in the barbershop or beauty parlor; they pop into the heads of individuals on the farm, at the work bench in the factory, they are presented to editors, radio commentators, teachers, clergymen—they keep popping up all over the lot. They do not arise according to any system, nor are they related to one another. So I adopt the natural method. I am concerned with only one question at a time. Occasionally I put in a few extra facts for good measure.

It is better to know nothing than to know what ain't so, observed Josh Billings. The longer I study the more I realize how hard it is to ascertain the truth, or even an approximation to the truth, about anything. Nobody seems to know much about anything for sure. Somebody is always making discoveries and upsetting what has passed for facts. Nothing in knowledge remains static. Science and scholarship are ceaselessly at work, unearthing new facts, reappraising old ones, suggesting fresh inferences. While the printers are setting these pages in type, my attention no doubt will be called to matter I will wish I had known.

I cannot guarantee the things in this book to be true. All I can do is to guarantee that I believe them to be true.

GEORGE STIMPSON

January 8, 1948
Washington, D. C.

INFORMATION
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What makes a waltzing mouse waltz?

The waltzing mouse is not an ordinary mouse that dances. It is a member of a rare domesticated breed, supposedly of Japanese origin, that has the habit of suddenly interrupting whatever it is doing and spinning around rapidly on end like a top. Some waltzers appear to be unable to progress in a straight course but whirl about in small circles continually. It is generally supposed that this characteristic is due to some unexplained defect of anatomy, perhaps a fault in the labyrinth of the ears that interferes with the animal's sense of equilibrium. Whatever the cause, the dancing characteristic is transmitted according to the Mendelian law of heredity, and waltzing mice are produced by selective breeding.

What does *weasel* mean in *pop goes the weasel*?

Pop goes the weasel is a curious old phrase that survives only in the refrain of a nineteenth-century comic song, which runs:

Up and down the City Road,
In and out the Eagle,
That's the way the money goes—
Pop goes the weasel!

The authorship of this song is generally attributed to "W. R. Mandale," about whom no information appears to be available and who may be a mythical person. The Eagle in the song was a tavern or pub on the street called City Road in London. *Pop goes the weasel* is of obscure origin and meaning. It may have been merely a piece of nonsense. The Oxford dictionary says it was "the name of a country dance in which these words were sung while one of the dancers darted under the arms of the others." Most people associate the saying with the quick, jerky, nervous movements of the small animal known as the weasel. This nimble little animal is noted for its furtiveness as it dodges in and out of crevices and holes with lightninglike speed in

front of an observer. Some suppose that *weasel* in *pop goes the weasel* did not originally allude to the animal of that name but to a flatiron or some other household or tradesman's article or tool known as a weasel. In the eighteenth century *pop* was British slang for "pawn" or "hock." According to this theory, the song alludes to the fact that poor wage earners were in the habit of popping or pawning some article or tool on Saturday night to pay for their drinks at the Eagle. A large glass wine bottle, with bulging sides and small neck and mouth, used to be called a weasel. It may have been this sort of weasel that popped when uncorked and made the money go. Still another theory is that the refrain in the song alluded to the opening and closing of a pocketbook made of weasel skin and popularly known at that time as a weasel. It seems more probable, however, that, as the Oxford dictionary intimates, *pop goes the weasel* was originally applied to a country dance and that it compared the actions of the dancers to the characteristics of the weasel.

Why are French soldiers called *poilus*?

Poilu as a slang name for a French soldier originated during the First World War and was at first applied only to a private fighting in the front lines. It literally means "hairy" and is formed from French *poil*, which is derived from Latin *pilus*, "hair." The generally accepted theory is that the French soldiers in the trenches on the western front were called *poilus* because they were often unable to shave off their beards and to cut their hair. By 1916 *poilu* was a common name for any French private soldier and it became the French equivalent of the British Tommy Atkins and the American Yank. It is possible that *poilu* as applied to French soldiers had a broader significance than the literal one. In the past, French soldiers had been notable for their fierce mustaches. Balzac, the French novelist, had employed *poilu* in the sense of brave or intrepid.

Which is correct, *possum* or *opossum*?

Some authorities suppose that the name of the only North American marsupial or pouched animal should be simply *possum* and not *opossum*. But *opossum* appears to be the original and correct form and *possum* only a shortened form. *Opossum* resulted when the early English colonists attempted to render the Indian name and does not suggest that the animal is of Gaelic ancestry. In his history of Virginia, Captain John Smith wrote: "An Opassum hath a head like a swine, a tail like a rat, and is of the bigness of a cat. Under her belly she

hath a bagge, wherein she lodgeth, carrieth, and suckleth her young." Many other early writers, however, wrote the word *possum*, and the short form still prevails in *possum grape*, *possum haw*, *possum oak*, *possumwood* and *playing possum*. The latter refers to the opossum's curious habit of curling up and acting as if it were dead when frightened or alarmed.

What was the tune the old cow died of?

People often say of a song or piece of music they do not like that it is "the tune the old cow died of." The expression itself, although it sounds American, is believed to be of Irish origin. It has not been found earlier than the eighteenth century, but some authorities suppose that it originated in connection with a seventeenth- or perhaps sixteenth-century Irish story of a farmer who had no provender for his cow and who tried to appease her hunger by playing her a tune on his fiddle. An old ballad, said to date back at least as far as Shakespeare's time, runs like this:

There was an old man and he had an old cow,
But he had no fodder to give her,
So he took up his fiddle and played her the tune:
"Consider, good cow, consider,
This isn't the time for the grass to grow,
Consider, good cow, consider."

Actually, it seems, it wasn't the tune but the lack of fodder that caused the old cow's demise. In other words, she died from starvation coupled with an overdose of advice.

Who said: "Where MacGregor sits is the head of the table"?

In Sir Walter Scott's *Rob Roy* (1817) Robert MacGregor, the romantic outlaw and freebooter, says: "Where MacGregor sits, there is the head of the table." Apparently through a slip Ralph Waldo Emerson substituted *Macdonald* for *MacGregor* when he quoted Scott. In *The American Scholar* (1837) Emerson said: "The great man makes the great thing. Wherever Macdonald sits there is the head of the table." The idea that the man makes the place rather than the place the man had been expressed in similar language by Cervantes in *Don Quixote*: "Let me sit wherever I will, that will still be the upper end." Robert MacGregor (1671-1734), to whom Scott also attributes the oft-quoted saying, "My foot is on my native heath, and my name is MacGregor," was popularly known as Rob Roy ("Robert the Red") because of his red hair. James VI of Scotland (James I of England)

proscribed the MacGregor clan on charges of treason to the Scottish realm and forbade all members of the clan to bear the family name. Although Charles II restored the MacGregors to their estates and name in 1661, the proscription went into force again under William and Mary in 1689, and it was not until 1822 that Sir John Murray, then the titular head of the clan, obtained a royal license to resume the ancient family name of MacGregor. This probably has been the only instance of a numerous family's being stripped of its name by royal decree. In 1693, upon the death of Gregor MacGregor, Rob Roy was acknowledged chief of the MacGregor clan and became "The MacGregor." About 1716, because of the royal ban against using the clan name, he assumed the surname Campbell. The chief of the proscribed clan turned to cattle stealing for a living. In 1727 the "Robinhood of Scotland" voluntarily gave himself up and was imprisoned in Newgate in London. After he had been sentenced to be transported to Barbados, the Highland outlaw was pardoned and permitted to return to Scotland.

Why is a kind of wine called port?

Port as the name of a kind of wine is a shortened form of *Porto*, the Portuguese name of a city in northern Portugal, which ranks second only to Lisbon in population and importance. The Portuguese refer to the city as *O Porto*, literally "the port," but in English and certain other languages the article *O* is compounded as part of the name and it is written *Oporto*. *Portugal* itself is derived from the name of this city. In ancient times a city at the mouth of the Douro River was known as *Portus Cale*. A district of which *Portus Cale* was the capital came to be known as *Terra Portucalensis*, which in turn became first *Portucalia* and finally *Portugal*. Portugal has long been noted for its wine industry and two of the most famous wines in the world derived their names from places in that country—Port and Madeira. Madeira, like the Azores, is regarded as an integral part of Portugal. The name in Portuguese literally means "timber," and the island was so named because it was thickly wooded when the Spanish and Portuguese first visited it. A white wine produced on the island was called Madeira in English as early as 1585. Port wine is not mentioned in Shakespeare but Madeira wine is. In *I King Henry IV* Poins asks Sir John Falstaff: "How agrees the devil and thee about thy soul, that thou soldest him on Good Friday for a cup of Madeira and a cold capon's leg?" The *Oporto* wine industry was not established until 1678 and the earliest English use of *port* in the sense of wine recorded by the Oxford dic-

tionary is dated 1691. Since then Oporto has exported immense quantities of wine and the city is famous for the product. Port is generally a strong dark-red wine with a sweet and slightly astringent taste, although a white variety is also produced. The Portuguese define port as wine made from grapes grown in northern Portugal, exported from Oporto and containing more than 16.5 percent of alcohol by volume. In the United States *port* is applied to wine similar to the Portuguese product.

Why are civilian clothes called mufti?

When a person in military or naval service dons civilian dress (*civvies*) he is said to be "in mufti." *Mufti* (pronounced *MUFF-tee*) in the sense of "plain clothes" as distinguished from a uniform came to us by way of the British army in India. It is an Arabic word literally meaning "magistrate" and is applied specifically in Moslem countries to a chief expounder of Mohammedan law. Formerly the chief judge of Islam at Constantinople was known as the grand mufti. He was the real head of the Mohammedan religion in the Ottoman Empire and, with the body of learned theologians known as *ulema*, constituted the theocratic element of the Turkish government. The principal Mohammedan judge in any country, district or city was also known as a grand mufti. For instance, the grand mufti of Jerusalem was the head of the Pan-Islamic movement. Strictly speaking, Islam has no church organization, clergy or liturgy, and the muftis are merely highly respected and learned authorities on Moslem law to whom Mohammedan judges of the ecclesiastical courts appeal for expert opinion. Just how *mufti* acquired the slang or colloquial sense of civilian clothes is not clear. The conventional attire of the Oriental mufti formerly consisted of turban, loose, flowing robes and sandals. In *Le Bourgeois Gentilhomme* (1670) Molière, the great French writer of comedies, portrayed a mufti on the stage dressed in a plain dressing gown, smoking cap and slippers. It appears that when British officers in India dressed informally their costume was compared to that of the muftis. Later the term came to be applied to any civilian clothes worn by a person who ordinarily wears a military uniform.

Which is correct *aluminum* or *aluminium*?

The silvery-white, light, ductile, malleable metallic element is called aluminum (*a-LEW-min-um*) in American and aluminium (*al-yew-MINN-yum*) in British usage. The existence of this element was

first recognized about 1812 by the English scientist Sir Humphrey Davy (1778-1829). He suggested *aluminum* as a name, but later changed it to *aluminium*. The term is derived from Latin *alumen*, "alum," a term usually applied to potassium aluminum sulphate. Just why *aluminium* should have prevailed in British and *aluminum* in American usage is hard to say, unless it was owing to the natural tendency in America to shorten words. It seems that the spelling *aluminum* was used as well as *aluminium* for a time in England, but the longer form finally prevailed because the termination harmonized with *potassium*, *magnesium* and other element names. Some writers, particularly in Canada, prefer *aluminium* as the scientific name of the element and *aluminum* as the name of commercial products made of it. Aluminum was first isolated in 1828 by the German chemist Friedrich Wöhler (1800-1882). Bauxite, the chief source of commercial aluminum, is so called because it was discovered in 1821 at Baux, France. In English this term is generally pronounced as if it were spelled *boxite*. Aluminum forms nearly 8 percent of the earth's crust and is the most abundant metallic element in the world. For a generation after its isolation the metal was more precious than gold. So far as known, the first articles made of aluminum were a set of table knives, forks and spoons made by a Paris jeweler for Napoleon III at a cost of \$100 apiece. The same jeweler made an aluminum watch fob for the king of Siam.

At what age do the wisdom teeth appear?

The third molars—the hindmost teeth on each side of the upper and lower jaws—are called the wisdom teeth because normally they are not cut until a person is between eighteen and twenty-five, when he is supposed to have reached the age of wisdom. "Wisdom teeth" is a translation of Latin *dentes sapientiae*. Equivalent phrases occur in Greek, Arabic and other languages. To cut one's wisdom teeth signifies reaching the age of discretion. When a person says or does a foolish thing we say he has not yet cut his wisdom teeth. But the cutting of the wisdom teeth does not indicate that physical or mental growth in the individual has ceased. There are cases on record of the wisdom teeth erupting as early as the age of fourteen and as late as the age of sixty-five. In fact, about 40 percent of people never have any wisdom teeth at all. The canine teeth in the upper jaw are called eyeteeth because their roots project upwards nearly to the orbits of the eyes. In both the deciduous and permanent sets the eyeteeth are cut later than most of the other front teeth. Hence to cut one's eye-

teeth means to be a baby no longer, to be up to snuff or to have one's weather eye open. To draw a person's eyeteeth means to take him down a notch or two, to take the conceit out of him or to fleece him without mercy. Actually the eyeteeth have no closer connection with the eyes than the other upper front teeth.

Who were the original Siamese twins?

This term was first applied to Chang and Eng, joined twins born in 1811 at Meklong, Siam. Their father was Chinese and their mother half-Chinese and half-Siamese, and therefore the original Siamese twins, although born in Siam, were three-fourths Chinese and one-fourth Siamese. Chang and Eng were joined at the waist by a thick band of fleshy ligament that became about four inches long and nine inches in circumference. The common navel was on the lower border of the cartilaginous structure, and a post-mortem showed that the blood vessels of the two livers communicated freely across the bridge, indicating that a surgical severance of the ligament might have been fatal to both. Chang and Eng were engaged successfully in the poultry business in 1824 when Robert Hunter, British merchant, saw them stripped to the waist and realized their value for educational and exhibition purposes. Hunter made a bargain with the mother (the father having died in 1819), and in 1829 an American sea captain named Coffin took the Siamese twins from Bangkok to Boston, where they arrived in April, 1829, when they were eighteen years old. Chang and Eng toured the United States and parts of Europe and made considerable money for their manager and themselves. In 1840, after saving \$60,000, they settled down as farmers, first in Wilkes County and later in Surry County, North Carolina. They were naturalized as American citizens by act of the legislature and took the surname Bunker. Three years later Chang and Eng Bunker married sisters, Sarah Ann and Adelaide Yeats, of Wilkes County. They had a total of twenty-two children—Eng, seven boys and five daughters; Chang, seven daughters and three sons—all of them normal except that one of Chang's sons and one of his daughters were deaf mutes. But their domestic life was not very happy. The wives quarreled and the Siamese twins had to set up separate homes, which they visited alternately a few days at a time. They were hit hard financially by the Civil War, which deprived them of their slaves and much of their other wealth, with the result that they had to return to show business and their tours. Chang, the one on the left, was the more intelligent of the two and also the more irritable. He drank heavily and when under

the influence of liquor had the habit of breaking furniture and throwing the pieces into the fire. Eng was a teetotaler. It is said that because of a disagreement they seldom spoke to each other, at one time for a period of two years. While the twins were returning from England in 1870 Chang had a stroke of paralysis. Neither Chang's drinking nor his paralytic stroke seemed to affect Eng. Nearly four years later, when they were almost sixty-three, Chang died in his sleep, and two or three hours later Eng also died, either from fright or because of his physical connection with his dead brother. From this famous pair any joined twins are now known as Siamese twins. The earliest joined twins of which there is authentic record were the "Maids of Biddendon," England, who were born about 1100 A.D. Siamese twins seldom survive. They may be of the fraternal but generally are of the identical type. The degree of physical connection may range from a simple union of the umbilical vessels to a considerable fusion of the two bodies. Whether they can be successfully separated by a surgical operation depends on the circumstances in each case. Siamese twins present all sorts of complicated legal problems. When they should be regarded as one person and when as two persons has never been determined clearly. Some transportation companies require Siamese twins to have two tickets and others require them to have only one. In 1939 Mary and Margaret Gibbs, twenty-seven-year old Siamese twins of Holyoke, Massachusetts, were paid a single salary of \$150 a week for show purposes and their manager is reported to have insisted that because of the joint salary they should be permitted to join a union as one person. The advisory board of the American Guild of Variety Artists (AFL) ruled that since the girls had two different names they would have to join as two members and pay separate initiation fees and yearly dues.

How often does the heart beat?

The rate of heartbeat varies with the age, sex and mental and physical condition of the individual. It may be said in a general way that the heart of the normal man beats about 72 times a minute, 104,000 times a day, 38,000,000 times a year and 3,000,000,000 times in a lifetime. The extreme range of the human heartbeat is from 16 to 200. An electrocardiograph film showed that the heart of a man executed by a firing squad in Utah in 1939 increased its beat from 72 to 180 a minute during the few minutes before the shots were fired. The heart of a woman normally beats on the average about eight times a minute faster than a man's does, and that of a newborn baby about

twice as fast as that of an adult. Even in the womb the heart of a female child beats faster than that of a male child, a fact that sometimes enables physicians to determine whether an unborn child is a boy or girl. This faster heartbeat of females occurs also in animals. The normal pulse of a bull is 46 a minute while that of a cow is 56. The heartbeat of birds is much faster than that of mammals and is so rapid that one cannot readily count it. Three gallons of blood a minute is sent from the right to the left side of the heart and about 4,320 gallons is pumped by the heart a day. The work done by the heart in 24 hours is equivalent to the force required to raise a ton to the height of 82 feet. The heart is always in motion, never resting in the generally accepted sense of the term. But muscles "work" only when they are contracting and it requires eight times as long for the heart to fill with blood when relaxed as it does to contract and force out the blood. Therefore it may be said that the heart works one-eighth of the time and rests the other seven-eighths. Oddly enough, more cases of coronary occlusion—stoppage of blood flow to the heart—occur while the victims are asleep or at rest than when they are awake and active. Many deaths attributed to heart trouble are really caused by infectious diseases.

Did Darwin originate the theory of evolution?

The general idea of evolution was already an old one when Charles Darwin was born. It was a familiar concept to the Greek philosophers and the sages of India before the beginning of the Christian era, and many other ancient thinkers had a hazy notion of an orderly development and progress in nature. Anaximander, the Greek philosopher who died about 547 B.C., believed in the transmutation of species and held that man evolved from aquatic animals. Several centuries later Aristotle approached the theory of evolution when he wrote: "Nature passes from lifeless objects to animals in such unbroken sequence, interposing between them beings which live and yet are not animals, that scarcely any difference seems to exist between two neighboring groups owing to their close proximity." Before the time of Charles Darwin (1809-1882) several writers had dealt with the subject freely. Among these were Comte Louis Leclerc de Buffon (1707-1788), French naturalist; James Burnet Monboddo (1714-1799), Scottish judge and anthropologist; Erasmus Darwin (1731-1802), English physiologist and poet and grandfather of Charles Darwin; Jean de Lamarck (1744-1829), French zoologist; Johann Wolfgang von Goethe (1749-1832), German philosopher; Etienne Geoffroy Saint-Hilaire (1772-1844),

French naturalist; and Arthur Schopenhauer (1788-1860), German philosopher. All of these men had advanced the general theory of the evolution of higher forms of life from lower and the evolution of man from the higher animals long before Charles Darwin became identified with the theory. In *Ancient Metaphysics* (written between 1779 and 1799) Lord Monboddo, the eccentric Scottish judge who dabbled in anthropology on the side, advanced the theory that man had raised himself from an animal condition through the necessities of his environment; in his *Origin and Progress of Languages*, Lord Monboddo identified man with the same species as the orangutan, and the author of the work, like Darwin later, was ridiculed for teaching that men descended from monkeys. In 1809, the year of Charles Darwin's birth, Lamarck published a definite statement on the theory of evolution and concluded that the resemblance in form and structure of groups of species was owing to affinity and that all living organisms descended from a few very simple forms, or possibly a single form, that originally developed from lifeless matter by spontaneous generation. He was also of the opinion that the human race was developed by the transformation of a series of mammal ancestors, the nearest of which are the primate apes. Jean Jacques Rousseau was sponsoring the ape-man theory as early as 1754, and Schopenhauer anticipated Darwin in the idea of natural selection for the preservation of the species. It was not until 1859 that Darwin published his *Origin of Species*. He was the first reputable naturalist to work out and to publish a complete and complex account of the theory of evolution through natural selection, including what Herbert Spencer and Alfred Russel Wallace called "the survival of the fittest." Even in the *Origin of Species*, which is reputed to have been hurried to press because Wallace had arrived at similar conclusions, Darwin made no attempt to solve the evolution of man. He finally tackled that subject in his *Descent of Man*, which was not published until 1871, long after the subject had been widely discussed by many others.

What is an Enoch Arden law?

A law providing for a divorce, an annulment or an exemption from liability on the ground of an unexplained absence of a husband or wife for a certain number of years is called an Enoch Arden law. For instance, the present New York Enoch Arden law provides that a marriage may be annulled if either party has been absent for five successive years and is not known to be alive. The more usual period of absence in Enoch Arden laws is seven years. The name was suggested

by *Enoch Arden*, the title and the name of the hero of a long narrative poem written in 1862 and published in 1864 by Alfred Lord Tennyson (1809-1892). In the story a sailor named Enoch Arden, after being shipwrecked on a desert island for several years, returns home to find his wife, who supposed him dead, happily married to his friend. After hovering in the neighborhood of his old home for a time the self-sacrificing hero decides not to make himself known but, rather than to wreck the marriage of his wife and friend, goes away and dies of a broken heart. This poem by the poet laureate of England was immensely popular in the Victorian age and is still regarded as a school classic.

Who said: "See Naples and die"?

"See Naples and die" (*Vedi Napoli e poi muori*) is an Italian saying of unknown origin and authorship. The idea of the proverb is that after one has seen Naples there is nothing else worth seeing, comparatively speaking. Naples occupies one of the most beautiful sites in Europe and has been a favorite with tourists for centuries. The bright sunshine in that region, the deep blue waters of the Tyrrhenian Sea and the Bay of Naples, the Isle of Capri, the panoramic beauty of the city itself on the north shore of the bay, and Mount Vesuvius, four thousand feet high and forty miles in the distance, smoking by day and glowing by night, have long been famous in song and story. Boccaccio wrote in the *Decameron*: "The very ancient city of Naples is perhaps the most delightful of all Italian towns." In *The Double Marriage*, an Elizabethan play ascribed to Beaumont and Fletcher, are the lines:

Naples, the Paradise of Italy,
As that is of earth.

And Martin Farquhar Tupper, in *Proverbial Philosophy* (1838) wrote: "Naples sitteth by the sea, keystone of an arch of azure."

What does *bonanza* mean?

Bonanza (pronounced *boe-NANN-za*) is now synonymous in the United States with a rich mine, a successful enterprise, a profitable undertaking, sudden prosperity or good luck. It is a Spanish word meaning "fair weather," particularly calm weather at sea. The ultimate source of the term is Latin *bonus*, "good." "To wish one bonanza" in Spain originally was equivalent to "Godspeed," "bon voyage," "prosperity," "success," "a good trip." Bonanza, a port near

Sanlúcar on the Guadalquivir Estuary in southwestern Spain, was so named because of its good anchorage and security from the boisterous winds and storms of the ocean. In colonial times a chapel at Bonanza was dedicated by the South American Company at Seville to *Virgen de la Bonanza*, "the Virgin of Fair Weather." *Bonanza*, like *El Dorado* and *eureka*, naturally lent itself to application to the new-found mineral treasures of the New World. A famous silver mine near Saltillo in Mexico was called Bonanza by the Spanish as early as 1554. The term in the sense of a rich deposit of ore was carried into the western United States from the border country before the Mexican War. It became customary to say of a prospector, when he discovered an exceptionally large and rich deposit of gold or silver, that he had "struck a bonanza." The term was given national circulation after the discovery and development of the Comstock lode in Nevada. This lode, fabulously rich in ore containing both silver and gold, was named after Henry Tompkins Paige Comstock (1820-1870), who was born of United States parentage in Trenton, Ontario. After serving in the Black Hawk and Mexican wars and trapping in the Rocky Mountains for the American Fur Company, Comstock went to Utah Territory in 1856 and laid claim, by right of discovery and previous location, to the land under which the richest silver and gold lode in existence was later found. Not suspecting the presence of the mineral wealth under his land, Comstock sold it for a trifling sum and spent the rest of his life prospecting farther north. The Comstock lode was discovered and opened in 1859. From that year to 1902 it produced 350 million dollars' worth of silver and gold. During the development of the Comstock lode, around which Virginia City grew up as a mushroom mining center, some ten "bonanzas" were found. The most famous of these, the Big Bonanza, was discovered in 1876. Between 1862 and 1868 the average yield of the Comstock lode was eleven million dollars; in 1877, the peak year and the year after the discovery of Big Bonanza, it yielded more than thirty-six million dollars. San Francisco capitalists operated these famous mines under the name of Consolidated Virginia, with headquarters at Virginia City, and the remarkable output became the basis of a notorious stock speculation fever that swept the whole country. Shares in the company, that originally represented many dollars per square foot in the mines, continued to rise in price for several years notwithstanding the fact that they were multiplied in number until they represented in terms of mining land little more than the thickness of the paper they were printed on. After the inevitable collapse of the stock scheme, *bonanza*,

which had become associated in the public mind with the Comstock lode, acquired the connotation of short-lived as well as sudden riches. Because of its mineral wealth, Montana used to be nicknamed the Bonanza State. *Bonanza* survives in the names of towns, mountains, streams and other places and objects in the western United States and Canada.

Why is a flowering plant called the dahlia?

The dahlia was named in 1791 in honor of Andreas Dahl, Swedish botanist and pupil of Linnaeus, from specimens seen by the German naturalist and explorer Baron Alexander von Humboldt. Dahlias comprise a small genus of tuberous-rooted flowering herbs of the thistle family and are indigenous to Mexico and Central America. Some varieties of the plant were grown by the Aztecs and were taken to Spain in the eighteenth century. One variety was introduced into England from Spain in 1789 by the Marchioness of Bute.

Who said: "Truth is stranger than fiction"?

"Truth is stranger than fiction" is a popular condensation of a thought expressed in Lord Byron's *Don Juan* (1823):

'Tis strange—but true; for truth is always strange,—
Stranger than fiction.

Truth Stranger Than Fiction (1858) is the title of the autobiography of Josiah Henson, who was born a slave on a Maryland plantation and who was the reputed prototype of Uncle Tom in Harriet Beecher Stowe's *Uncle Tom's Cabin*.

Who said: "The pen is mightier than the sword"?

This famous quotation is from Bulwer-Lytton's *Richelieu*, written in 1838 and first produced at Covent Garden March 7, 1839. Bulwer-Lytton, however, qualified the statement. The complete quotation reads:

Beneath the rule of men entirely great,
The pen is mightier than the sword.

Elsewhere in the same play are the words: "Take away the sword, states can be saved without it." The thought embodied in Bulwer-Lytton's famous line was foreshadowed by many earlier writers. About 400 B.C. the Greek tragic poet Euripides had expressed the thought that "the tongue is mightier than the blade." Plutarch tells us that

King Pyrrhus of Epirus used to say that Cineas, the orator, had won him more cities with his eloquence than he himself had won with his sword. According to a Moslem proverb dating back to the generation immediately after Mohammed's death: "Paradise is as much for him who has rightly used the pen, as for him who has fallen by the sword." In *Hamlet* (about 1601) Shakespeare wrote: "Many wearing rapiers are afraid of goosequills." John Taylor, the Water Poet, virtually a contemporary of Shakespeare, said:

Pens are most dangerous tools, more sharp by odds
Than swords, and cut more keen than whips or rods.

Another contemporary of Shakespeare, Robert Burton, wrote in *The Anatomy of Melancholy* (1621) a Latin observation which roughly translated means: "How much more cruel the pen may be than the sword." In 1641 Martin Parker said in *The Poet's Blind Man's Bough*: "More danger comes by th' quill than by the sword." Henry Vaughan, in *On Sir Thomas Bodley's Library* (about 1650) wrote:

Caesar had perished from the world of men,
Had not his sword been rescued by his pen.

In his *Memoirs* (1702) Saint-Simon said: "So much had the pen, under the king, the advantage over the sword." Napoleon was thinking of the same thing when he observed that "Three hostile newspapers are more to be feared than a thousand bayonets."

Do alligators often kill people?

Only a few species of crocodilians are dangerous to man. American alligators seldom attack man either in or out of the water except in self-defense. The late Dr. William F. Hornaday, American naturalist, declared that he had been unable to find a single authentic record of the loss of a human life by the American alligator. Young alligators are often kept as pets. At least three species of crocodiles are believed to be dangerous to man. The most dangerous is the Nile crocodile. It is said that "the man-eater of the Nile" kills more human beings on the average than any other wild creature in Africa. But even in this species the man-killing habit is generally confined to certain individuals. The ordinary crocodile is wary and suspicious of human beings and will usually retreat rather than attack persons who invade its waters. They do, however, lie in wait at the water's edge and seize, overpower and eat animals of considerable size that come to drink. There is one record of an African crocodile that killed and ate be-

tween forty and fifty persons before it was shot. Deaths from crocodiles are occasionally reported from the Philippines, Borneo, India and other parts of southwestern Asia and the neighboring islands. It is said that some natives of Borneo and Madagascar will not kill a crocodile unless it has killed a human being.

How did the custom of sending valentines originate?

Association of the feast day of St. Valentine on February 14 with the popular custom of exchanging love missives between persons of opposite sex seems to have been accidental. There is no evidence that the custom was suggested by or is in any way historically connected with anything in the life of a saint or martyr named Valentine. A number of early Christian martyrs and saints bore the name Valentine or Valentinius, and, strangely, the feast day of several of them falls on February 14 in the Roman and Anglican church calendars. Virtually nothing is known of these martyrs except what has been preserved in a few obscure legends. One of them was a pagan physician at Rome who, after being converted, became a Christian priest. He was imprisoned for giving aid to persecuted Christians and he restored the sight of his jailer's blind daughter. In the end, however, he was clubbed to death and then beheaded February 14, 269 A.D., during the reign of Emperor Claudius II, generally known as Claudius the Goth. According to an apocryphal story, at a time when single men were badly needed for service in the Roman legions, this emperor issued a decree forbidding marriage of young men. St. Valentine was martyred because he befriended lovers by marrying them secretly in violation of this edict. Another St. Valentine, who is referred to as a bishop in Umbria, was beheaded at Rome about 273 A.D., his body being taken to Interamma by his disciples. Both of these St. Valentines appear to have been buried on the Flaminian Way, but at different distances from the Roman capital, the former being interred in a cemetery still bearing his name. Even less is known about a third St. Valentine, who was martyred in Africa at a later period. The practices now associated with Valentine's Day are of considerable antiquity and were probably of pagan origin. There may be survivals of the Roman festival of Lupercalia, which was celebrated in February. It seems that on February 14, the eve of the purification festival in honor of Juno, young Romans were paired off by lot, the names of the women being placed in a receptacle and drawn by the men. A similar custom of pairing young people of opposite sex by lot existed in England in the Middle Ages. At first those thus paired exchanged presents and were

each other's valentines for the ensuing year. Later only the men offered presents, generally a pair of gloves, and our present-day practice of sending sentimental or comic letters or cards called valentines on St. Valentine's Day is undoubtedly a relic of this older custom. Nowadays the missives are likely to be a burlesque or travesty on the original valentines, although genuine tokens of love and affection are still exchanged by lovers and sweethearts on this occasion. The valentine custom went through a curious evolution in England. In Shakespeare's time the first girl a boy saw on St. Valentine's Day became his valentine for the year. The distracted Ophelia in *Hamlet* alludes to this custom when she sings:

Good morrow, 'tis St. Valentine's Day,
All in the morn betime,
And I a maid at your window,
To be your valentine.

It appears that when two persons of the opposite sex met on this day the one who first said, "Good morrow, 'tis St. Valentine's Day," was entitled to receive a present from the other. In time people became cagey on the subject. Samuel Pepys, the diarist, called at Sir William Batten's on St. Valentine's Day in 1664. He refused to enter, he tells us, until "I asked whether they that opened the door was a man or woman, and Mingo, who was there, answered a woman, which, with his tones, made me laugh; so up I went, and took Mrs. Martha for my Valentine (which I do only for complacency); and Sir W. Batten he go in the same manner to my wife, and we were all very merry." When Valentine's Day came around the next time Pepys had some fun with his wife, because she held her hands over her eyes in order not to see the painters gilding the chimney piece and pictures in the dining room. The chronicler also supplies us with the earliest evidence of the exchange of notes on Valentine's Day. In 1667 he wrote: "This morning came up to my wife's bedside little Will Mercer to be her valentine, and brought her name writ upon blue paper, in gold letters, done by himself very pretty; and we were both well pleased with it." On February 14, 1668, the diarist noted: "Up, being called up by Mercer, who come to be my Valentine, and I did give her a guinny in gold for her Valentine's gift. There comes Roger Pepys betimes, and comes to my wife, for her to be his Valentine, whose Valentine I was also, by agreement to be so to her every year; and this year I find it is likely to cost £4 or £5 in a ring for her, which she desires." A fashionable young lady described in a London paper how she ob-

served Valentine's Day in 1754: "The night before I got five bay-leaves and pinned one to each corner of my pillow and the fifth in the middle, and then if I dreamed of my sweetheart we would be married before the year was out. But to make it more sure, I boiled an egg hard and took out the yolk, and filled it with salt, and when I went to bed I ate it, shell and all, without speaking or drinking after it." Elaborate designs, pictures of Cupid shooting arrows through a heart, sentimental and comic messages in prose or verse—these came with cheap postage and increased use of the mails. Two theories have been advanced as to how the day for these customs became identified with February 14. One is that *valentine* is an alteration of Old French *galantine* (whence English *gallant*), a lover of the fair sex, and became associated with the saint's feast day through similarity and confusion. If this theory is correct, *Valentine's Day* literally means "lover's day." The other theory, which is more widely accepted, is that the popular customs are traceable to the belief, common in the Middle Ages and perhaps in ancient times, that February 14 is the day on which all birds mate. We find many references to this belief in French and English literature as early as the fourteenth and fifteenth centuries. About 1381 Chaucer wrote in *Parlement of Birdes; or, the Assembly of Foules*:

For this was on saynt Volantynys day
When euery byrd comyth there to chose his mate.

Shakespeare alludes to it in *A Midsummer-Night's Dream*, in which the Duke of Athens, seeing Demetrius, Lysander, Hermia and Helena asleep in the wood in May, says: "Saint Valentine is past; begin these wood-birds but to couple now!" From this belief February 14, which accidentally was the feast day of the saint, may have come to be regarded as specially set apart to lovers and the proper occasion for exchanging love tokens.

How did *kiosk* originate?

Kiosk (pronounced *keh-OSSK*) is derived through French *kiosque* from Turkish *kiushk*, "pavilion," and Persian *kushk*, "palace," "villa" or "portico." In Turkey and Persia a kiosk is a light open pavilion or summer house supported by pillars and generally covered with vines or flowering creepers and often inclosing a fountain. Ibn-Batuta, the fourteenth-century Arabian traveler, wrote: "When he was returned from his expedition, and drawing near the capital, he ordered his son to build him a palace, or as those people call it, a *kushk*, by

the side of a river that runs at that place, which is called Afghanpur." Pietro della Valle, Italian traveler in Asia, wrote about 1623: "There is (in the garden) running water which issues from the entrance of a great *kiosck*, or covered place, where one may stay to take the air, which is built at the end of the garden over a great pond which adjoins the outside of the garden, so that, like the one at Surat, it serves also for the public use of the city." About 1860 the English began to use *kiosk* in the sense of a small canopy, booth, stall or light structure on the street used to shelter a band, newsboy or flower and refreshment vender. In the United States the term is frequently applied to a glass-inclosed booth that houses a thermometer, barometer and other weather-registering instruments.

How did *nose for news* originate?

This phrase is of unknown origin. While the exact phraseology is probably modern, the idea expressed by it is centuries old. Ralph, a servingman in *A York-Shire Tragedy*, one of the plays sometimes attributed to Shakespeare but actually of unknown authorship, says: "Now my nose itches for news."

What does *Buenos Aires* mean?

Buenos Aires, the name of the capital of Argentina, is a Spanish phrase literally meaning "good air." Two unsuccessful attempts were made to found settlements on the site of the present city of Buenos Aires before a permanent settlement was made. In 1536 Don Pedro de Mendoza, with a large and well-equipped expedition from Spain, established a settlement there, but because of mismanagement and the hostility of the natives the place was completely abandoned in 1541 by decree of the governor of Paraguay. All the settlers burned their homes and carried their property to Asuncion. The next year part of of the expedition of Cabeza de Vaca made another unsuccessful attempt to establish a Spanish settlement on the site. It was not until 1580 that Don Juan de Garay, governor of Paraguay, succeeded in effecting a settlement that became permanent. Mendoza had called his settlement *Santa Maria de Buenos Aires*, "St. Mary of the Good Breezes," because of the pleasant breezes and invigorating atmosphere of the place. Garay, who envisioned a great city at this point on the Rio de la Plata, named his settlement Ciudad de la Santissima Trinidad, but retained Mendoza's descriptive name of the port. Thus the full name of the city and port is *Ciudad de la Santissima Trinidad y Puerto de Santa Maria de Buenos Aires*, "City of the Most Holy

Trinity and the Port of Holy Mary of Good Atmosphere." Buenos Aires is the largest city south of the equator and the largest Spanish-speaking city in the world. About a quarter of the population of Argentina lives in the capital and its suburbs. There is an Argentine saying that, "When Buenos Aires has a cold, the whole republic sneezes." An approximation of the Spanish pronunciation of *Buenos Aires* is *BWAYN-nohs EYE-race*. In English it is widely pronounced *BONE-os AIR-ez*. The final *s* in each element of the name has the sibilant and not the *z* sound in Spanish. The city is sometimes familiarly referred to simply as B.A.

How did hollyhocks get their name?

Hollyhock is derived from Middle English *holi*, "holy," and Anglo-Saxon *hoc*, "mallow," and literally means holy or blessed mallow. The word is analogous to *holiday*, "holy day," and really should be spelled *holihock*, as it once was. It is supposed that the English marsh mallow (*Althaea officinalis*), the flower to which the name was originally applied, was so called from some now forgotten legend in the life of one of the early saints. There seems to be no ground for the common story that hollyhocks received their name from having been brought to Europe by the crusaders from the Holy Land, where they grew in abundance. This popular name of the marsh mallow has in more recent times been transferred to *Althaea rosea*, a different species of the same genus. The plant now known as the hollyhock is a native of Asia and southern Europe and is a tall plant producing numerous large flowers in many tints of red, white, yellow and purple close to the main stalk. Hollyhocks more than twenty-five feet tall have been grown.

What was the potion drunk by Socrates?

The source of the poison that Socrates was condemned to drink has never been positively identified. It is commonly supposed to have been prepared from the European water hemlock, *Cicuta virosa*, which produces a virulent narcotic poison, or from the common European poison hemlock, *Conium maculatum*, which is a biennial plant belonging to the parsley family and contains a yellowish, oily, poisonous liquid, the active principle of which is alkaloid. The Greeks called the potion drunk by Socrates *coneion*, and the weight of evidence indicates that it was derived from poison hemlock, which is also known as St-Bennet's-herb and spotted parsley. *Hemlock* is of English and not of Greek origin and it was not applied to the potion

taken by the Greek philosopher until about the sixteenth century. Shakespeare refers to hemlock as a drug or poison. In *Macbeth* one of the witches speaks of the "root of hemlock, digg'd i' the dark," and in the same play Banquo probably refers to that plant when he asks, "Have we eaten on the insane root that takes the reason prisoner?" The King James translation of the Bible makes Amos the prophet say that "ye have turned judgment into gall, and the fruit of righteousness into hemlock." However, the word *hemlock* is applied to several other plants of the same general family, and in the United States it is applied to certain evergreen trees because their leaf arrangement was supposed to resemble that of the common poison hemlock, which has been naturalized in America. So far as known no part of the American hemlock tree is poisonous and there is probably no basis for the occasional reports of persons becoming poisoned as the result of mistaking the hemlock tree for slippery elm and chewing or eating it. Some of the Indian tribes in the Pacific Northwest and in the Southwest regularly made cakes of the soft and sweet inner bark of this tree, and hemlock bark used to be carried by seamen as a medicine for scurvy. The poison hemlock is an erect branching plant ranging in height from two to six feet, with a stout, hollow, bright-green stem spotted with purple, with finely divided leaves and with small white flowers in umbrellalike clusters. When bruised the plant emits a disagreeable, mouselike odor. All parts of the plant, but particularly the fruit and roots, contain coniine, which was so called because it was believed to be the *coneion* of the Greeks. It has a stupefying odor, is used medicinally as a sedative and when taken into the human body in proper quantities acts as a powerful irritant poison, producing paralysis of the motor nerves. Persons are sometimes poisoned by mistaking the leaves of the poison hemlock for those of parsley or its roots for parsnips. Hemlock poison weakens and paralyzes the muscles, affecting the feet and lower limbs first, and then gradually extending upwards until it affects the heart and the respiratory organs. As a rule the victim does not become senseless or unconscious or have convulsions until the lungs are paralyzed and the breath cut off. Presumably it was such a death as this that Socrates, one of the greatest thinkers of all time, died in 399 B.C. He was charged with corrupting the youth of Athens and neglecting the gods. A pure and humble man, who honestly regarded himself as a public benefactor, he treated the charges with contempt, with the result that he was condemned to death and compelled under the Athenian law to take *coneion*, which we now suppose to have been a potion of poison

hemlock. The phrase "to drink the hemlock" did not originate until about 2,000 years after the death of Socrates, although it is often used as if it were the literal translation of a Greek phrase.

What does *Arms* in hotel names signify?

Arms in this connection is short for *coat of arms*, "a heraldic device of a family." Inns, taverns and public houses in England were formerly known by the various devices on their signs: as, the Boar's Head Tavern and the Mermaid Inn. Often the inn sign was taken from the coat of arms of a nobleman or other person of distinction who lived in the vicinity. Hence there were inns bearing the sign and name of the Oxford Arms, the Salisbury Arms, the Courtenay Arms, etc. Sometimes an innkeeper adopted the coat of arms of the king or queen after they had visited or patronized his inn; hence the common names, the King's Arms and the Queen's Arms. The practice of giving hotels, apartment houses and other buildings such high-sounding names as the Chester Arms and the Colton Arms was copied after this old English custom. The Beekman Arms at Rhinebeck, New York, built about 1700 and operated as a hotel continuously ever since, is said to be the oldest hotel in the United States.

What is the Grand Chaco?

The Grand Chaco (*El Gran Chaco* in Spanish) is a vast wilderness of about 300,000 square miles in the heart of South America. It is a sparsely populated wild region of marshes, lagoons, tropical jungles, grassy plains and open woodlands. Some of it has never been thoroughly explored and some of the Indian tribes there have never submitted to any governments but their own. This "green hell" was called *Chaco* or *Chacu* by the Incas before Pizarro conquered Peru. The term is believed to signify "hunting ground" or "drive of wild animals." Chaco tribesmen, unable to cope with the trained Inca warriors, scattered in all directions like game in a hunting drive when their territory was invaded by the more civilized people from the Andes. Bolivian Indians apply *chaco* to an unctuous earth that they eat with chocolate. The Grand Chaco is composed of Chaco Boreal, Chaco Central and Chaco Austral. Its known natural resources consist of palms, cabinet and building woods, quebracho (source of tannin used in curing leather) and some minerals and oil. Argentina, Paraguay and Bolivia began to fight over the control of this area soon after their liberation from Spain. Wars over the Chaco have cost more lives than the territory has inhabitants. That part of the Chaco

south of the Pilcomayo River—about 50,000 square miles—was definitely acquired by Argentina. A strip of the Chaco known as the “Hayes Zone” was awarded to Paraguay in 1878 when President Rutherford B. Hayes of the United States acted as arbiter. The remainder is still the subject of a century-old dispute between Paraguay and Bolivia. The crux of the Chaco dispute has landlocked Bolivia’s demand for a port on the upper stretches of the Paraguay River. That part of the Chaco claimed by Paraguay is larger than Paraguay proper. After intermittent fighting for years Paraguay formally declared war against Bolivia in 1933. When hostilities were suspended in 1935 this war had cost more than 100,000 lives. Bolivia got the worst of the contest because her troops, chiefly Indians reared in the high Andes, could not endure the hot, sultry and rainy climate in the Chaco lowlands. In 1938 the two countries agreed to a formula by which their boundaries in the Chaco were to be determined without further bloodshed.

What is a dead march?

Dead march is the name given to a piece of music in slow tempo and suitable in solemnity of style and rhythm to accompany a funeral procession or to be played on a sad occasion. The term is synonymous with *funeral march*. Perhaps the most noted dead or funeral marches are from Georg Friedrich Handel’s oratorio entitled *Saul*, from the third sonata of Ludwig van Beethoven’s Third Symphony (*Eroica*), and from one of Frédéric François Chopin’s sonatas. Chopin’s famous funeral march (Sonata, Opus 35), however, does not express grief over the death of an individual, but expresses the Polish composer’s feelings over the loss of the independence of his native land. The closing stage directions of several of Shakespeare’s tragedies call for a “dead march.” For instance: *Hamlet*, “A dead march. Exeunt, bearing off the bodies, after which a peal of ordnance is shot off”; *Macbeth*, “Exeunt, with a dead march”; and *Coriolanus*, “Exeunt, bearing the body of Coriolanus. A dead march sounded.” A march in quick tempo is often called a *military march*.

Which is correct *whisky* or *whiskey*?

Either *whisky* or *whiskey* is correct, although *whisky* appears to be the older and preferred spelling for general purposes. *Whiskies* is the correct plural of *whisky*, and *whiskeys* of *whiskey*. In trade usage, however, “Scotch *whisky*” and “Irish *whiskey*” are thus distinguished; that is, commercially speaking there is no such thing as true “Irish

whisky" and "Scotch *whiskey*." This probably accounts for the fact that there is a continual argument in many newspaper offices as to the proper spelling of the word. It is not uncommon to see it spelled both *whisky* and *whiskey* in the same edition of a newspaper or magazine. Often the editorial and advertising departments differ on the spelling. It is a common error to spell the singular *whiskey* and the plural *whiskies*. *Whisky* is believed to be derived from Gaelic *usquebaugh*, a corrupted combination of *uisge*, "water," and *beatha*, "life," literally meaning "water of life." It was first applied to a spirituous liquor distilled from malted grain in Ireland and Scotland. Which country was the first to make the product is a disputed question. *Usquebaugh*, recorded as early as 1591, gradually became *whiskybae*, which was finally shortened to *whisky*. Some Scottish writers continued to use the earlier form of the word. For instance, in *Tam o'Shanter*, Robert Burns wrote:

Inspiring bold John Barleycorn!
What danger thou canst make us scorn!
Wi' Tipenny, we fear nae evil,
Wi' Usqueba, we'll face the devil!

The earliest use of *whisky* recorded by the Oxford dictionary is dated 1715. Some suggest that the term may be derived from Old Irish *huisk*, "strong," and *eah*, "water," but that theory is unsupported by etymological evidence. There may be a distant relationship between the Gaelic word and Latin *aqua vitae* (literally "water of life"), which the medieval alchemists applied to unrectified alcohol distilled from wine, especially brandy. The corresponding French phrase is *eau de vie*, also meaning "water of life," which is still the French name for brandy. *Brandy* itself was originally *brande-wine* or *brandy-wine*, signifying "burnt wine" and referring to its distillation from wine or grapes.

Why may women propose in leap year?

The belief that women may propose marriage to men with perfect propriety in leap years is of considerable antiquity. Nobody knows just how it got started and no satisfactory explanation of this curious tradition has ever been offered. A pamphlet entitled *Love, Courtship, and Matrimony*, printed in London in 1606, says: "Albeit it nowe become a part of the common lawe in regard to social relations of life, that as often as every leap yeare doth return, the ladyes have the sole privilege during the time it continueth of making love, either

by wordes or lookes, as to them it seemeth proper; and, moreover no man will be entitled to benefit of clergy who doth in any wise treat her proposal with slight or contumely." "'Tis leap year, lady and therefore very good to enter a courtier," occurs in George Chapman's *Bussy d'Ambois* (1607). A grotesque and highly improbable story, often referred to as a legend, traces the privilege to an incident in the lives of St. Patrick and St. Bridget. It is said that in 1228 the parliament of Scotland passed a law providing that during the current reign maiden ladies had the privilege of proposing and that any man rejecting such a proposal should be fined unless he could prove that he was married or engaged, but this alleged statute is of doubtful authenticity. Similar alleged laws legalizing the custom in France and in the city-states of Florence and Genoa in Italy are likewise open to question. According to an old English saying, ladies may propose during leap year and if rejected they may claim a silk gown. There used to be a curious belief in New England that in leap year beans grow on the wrong side of the pod.

How did *fathom* originate?

Fathom in the sense of a unit of measurement is derived from Anglo-Saxon *feathm*, "an embrace." The outstretched arms are the underlying thought of the term. Before linear measurements were standardized and when most of them were derived from the human body, a fathom was a rough measurement of the distance from finger tips to finger tips of a man's outstretched arms. *Fathom* is used in the English version of the New Testament to render Greek *origina*, which is from *orego*, signifying to extend the arms. Although originally a land term, *fathom* as a noun survives chiefly as a sea term to denote six feet, the unit of measure used in taking soundings of the depth of water. Figuratively the word is used in the sense of to sound, to interpret, to get at the bottom of or to find the depth of.

What does *send to Coventry* mean?

To send a person to Coventry means to boycott him socially by having nothing to do with him. When we refuse to associate or to have intercourse with a person we are said to send him to Coventry "I seem to be the person marked for displeasure, and was almost literally sent to Coventry," wrote David Garrick (1717-1779). "This again," wrote Frances Burney (1752-1840) in her diary, "sent me to Coventry for the rest of the dinner." The phrase is of uncertain origin. It is generally supposed that it was originally linked in some way with

Coventry, a town in Shakespeare's home shire of Warwick, and that it originated during the English civil war in the seventeenth century. There are two theories as to its origin. According to one, it was suggested by the fact that Royalist prisoners were held incommunicado at Coventry. In his *History of the Rebellion* (1647) Edward Hyde Clarendon says Coventry was a Cromwellian stronghold during the civil war and that the Parliamentarians of Birmingham sent some Royalists they had captured to Coventry for safekeeping. According to the other theory, the inhabitants of Coventry in those days so disliked the military that a woman seen speaking to a soldier was immediately ostracized, and accordingly when a soldier was sent to join the garrison at Coventry he was isolated from all home life and feminine society. Some writers go so far as to say that Coventry was regarded in the English army as such an undesirable station that refractory soldiers were sent there for discipline. But these theories of the origin of "send to Coventry" are only surmises unsupported by etymological evidence.

How did Ireland get its name?

The first element in *Ireland* appears to be an ancient Gaelic root word that the early Celtic settlers on the island applied to themselves. All explanations of the origin of the term are little more than guesswork and about all that can be said on the subject is that *Ireland* means "the land of the Irish." More than 400 years B.C. the island was referred to as *Ierna* in a Greek poem. In later Greek this became *Iverna*, and in Latin *Hibernia*, which is still a poetic name of Ireland. Some authorities derive *Erin*, another poetic name of the island, from Gaelic *Iar-innis*, "west island," and *Ireland* from Gaelic *Iar-en-land*, "land of the west," supposedly alluding to the fact that it is the westernmost of the British Isles. Others derive the root word from an Indo-European root signifying either "land" or "fat," or perhaps both. It has even been suggested that the term was derived ultimately from *aryan*, which is supposed to mean "farmer" or "highborn." Still another theory is that the first element in *Ireland* signifies "iron" and that the name literally means "iron-land." In support of this theory an "old Celtic legend" is cited to the effect that in ancient times an iron sword was buried in the heart of the island to bring good luck and to charm the land from frequent inundations from the sea. *Eire*, pronounced *AIR-a* to rhyme with *Sarah*, is the modern Gaelic form of *Ireland*. *Erse*, a variant of *Irish*, is applied to both Scotland and Ireland to the ancient Gaelic language. Thus it appears that *Ireland*,

Eire, Irish, Erin, Erse, Averno and Hibernia all stem from the same Gaelic name that the early Celtic inhabitants applied to themselves for reasons now unknown. In 1922 the island was divided into two political units—Northern Ireland, part of the United Kingdom, and the Irish Free State, an autonomous state within the British Empire. The Irish Free State, often known as Southern Ireland notwithstanding part of it extends farther north than Northern Ireland, protested against this "Partition of Ireland." Under the constitution of 1937 the Irish Free State officially changed its name to *Eire* in Gaelic and *Ireland* in English. At the same time Gaelic was made the first official language and English the second, although comparatively few of the inhabitants could speak or understand Gaelic, while virtually all of them could speak English. This constitution divorced *Eire* from the United Kingdom for all practical purposes and made it a "sovereign, independent, democratic state," although provision was made for co-operation with the members of the British Commonwealth of Nations. In 1939 the United States provided that citizens of *Eire* need not renounce allegiance to the British sovereign when they become naturalized American citizens. The constitution of *Eire* declares that the country shall embrace the "whole of Ireland, its islands, and the territorial seas," but provided that, pending the reintegration of the national territory, the laws passed by the Parliament under the constitution shall apply to the same area as the former Irish Free State. The *Eire* flag consists of vertical stripes of green, white and orange, the last being symbolical of Northern Ireland. Although recognized as a Catholic country in the constitution, *Eire* chose a Protestant for its first president. Dr. Douglas Hyde (1860-1945), noted scholar and writer, was inaugurated president of *Eire* June 25, 1938. He founded in 1893 the Gaelic League for preserving and extending Irish Gaelic, revived the ancient Irish classics, made Gaelic a required study in the schools and is credited with being largely responsible for saving *Eire's* native language from extinction.

What is a filbert?

Filbert is merely another name for the hazelnut. Both the Old and the New World shrubs and small trees that produce hazelnuts or filberts belong to the genus *Corylus*. The nuts are known as filberts particularly when they are grown commercially. Virtually all hazelnuts on the market are called filberts. The origin of *filbert* is uncertain. The term in various forms dates back in English to the Norman Conquest of 1066 and it occurs in the Middle English of John Gower,

who died in 1408. The generally accepted theory is that *filbert* was derived somehow from the proper name *Philibert*. One conjecture is that it was suggested by the fact that St. Philibert's feast day fell on August 22, in the nutting season. About 1612 Henry Peacham, who referred to "the Philibert that loves the vale," explained that *filbert* was "so named of Philbert, a king of France, who caused by arte sundry kinds to be brought forth." In *The Tempest* (1611) Shakespeare has Caliban promise Stephano he will bring him "to clustering filberts." Some authorities derive the term from Old High German *Filu-berht*, literally "very bright." Still others suppose that *fillbeard* was the original form and that the nut was so called because it just fills up the cup formed by the beards of the calyx. The Romans called the hazelnut or filbert *avellana*, from Avella (Abella), a city in the province of Campania, Italy, where the nuts were produced in large quantities in ancient times. *Corylus avellana* is the scientific name of a species of filbert widely cultivated in Europe. In *The Bible in Spain* (1843) George Borrow wrote that the town of Valliviciosa near Oviedo in northern Spain "is sometimes called *La Capital de las Avellanas*, or the capital of the Filberts, from the immense quantity of this fruit which is grown in the neighborhood; and the greatest part of which is exported to England."

How did geezer originate?

Geezer in the sense of a codger, a queer old duck or an "odd genius," is believed to be a dialectic corruption of *guiser*, which originally signified one in disguise and later a mummer, especially a Christian mummer. An odd, eccentric or queer person was called a *guiser* or *geezer* because he was fancied to resemble a person dressed up in outlandish costume like a scarecrow for a masque or mummer's parade.

Who was "the Knight of the Cloak"?

Sir Walter Raleigh is known as "the Knight of the Cloak" from the legend that on one occasion, when Queen Elizabeth was about to enter her barge, he threw his mantle over some mud in her majesty's path to enable her to walk dry shod over the puddle. This incident is supposed to have occurred after Raleigh returned to England from Ireland, where he had taken a conspicuous part in suppressing the Desmonds rebellion of 1581. At that time Sir Walter was in high favor with the queen and some of the old chroniclers give added point to this alleged act of gallantry by explaining that his court clothes represented "a considerable part of his estate." Historians

have not been able to find any evidence that Sir Walter ever laid his cloak on the ground for Queen Bess to step on. The story rests on nothing better than the gossip of later generations. In *Kenilworth* (1821) Sir Walter Scott relates the story as if it really happened and says that the queen commanded her favorite to wear "the muddy cloak till her pleasure should be further known." But the story is characteristic of the chivalrous spirit of the age in which Queen Elizabeth and Sir Walter Raleigh lived. Many courtiers at Elizabeth's court would gladly have offered their mantles to protect the queen's feet if they had had the opportunity and if the idea had occurred to them, and Queen Bess would probably have loved it.

How did *buckwheat* originate?

Buckwheat is a corruption of *beech-wheat*. This plant was so called because its triangular-shaped seeds resemble the mast or nuts of the beech tree. Buckingham in England is believed to have received its name originally from the great number of beech trees then growing there.

Was the roc a real bird?

The roc, or *rukḥ* as it is spelled in Arabic and Persian, existed only in fable. It was conceived to be a monstrous white predatory bird of such great size and strength that it could fly away with a ship in its beak. In Persia the same mythical bird is often referred to as the *simurg*. Most of our knowledge of the roc is derived from the *Arabian Nights' Entertainments*, although the legend of this bird was known in Europe before these stories were translated into Western languages. According to Sir Richard Burton's translation, Sindbad the Sailor, sitting in a tree on an island where he was shipwrecked, saw some great white thing afar off in the interior of the island. Upon inspection he found it to be a huge white dome rising high in the air and of vast compass. Walking around it he could find no entrance, nor could he make any impression on the wall because of its smoothness and slipperiness. The sailor then marked the spot where he stood and went around the dome again to measure its circumference, which he found to be fifty good paces. As he stood there wondering how he might enter, suddenly the sun was hidden from him and the air became dull and dark. It seemed as if a cloud had come over the sun, but looking at the sky more carefully Sindbad saw that what at first appeared to be a cloud was in fact a bird of gigantic girth and inordinately wide of wing, which, as it flew through the air, veiled the

sun and hid it from the island. Then he recalled the story of the roc and realized that the dome was a roc's egg. As he looked and marveled the bird alighted over the egg, spread out its wings with its legs stretching out behind, and in that posture fell asleep. Sindbad, desiring to be carried from that desert island to a land of cities and inhabitants, twisted his turban into a rope and bound his waist fast to the legs of the roc. The next morning the bird flew away, carrying him to a dizzy height, and finally alighted on a high hill, never taking the least heed of the seaman. After he had cut himself loose Sindbad found that he was in the land of diamonds. Arabian writers tell us that the roc regularly fed its young on elephants, and an old Persian print represents one of the birds carrying three elephants in its beak and talons. Early writers were of the opinion that the original home of the roc was in Madagascar, and the root of the myth may be found in that island. It is related that an Arab living in western Africa was shipwrecked on a large island in the Indian sea, presumably Madagascar, and when he returned to civilization he brought back reports of a marvelous bird that he had seen. He had with him an enormous quill from the wing feather of a roc not yet hatched, and he reported that the eggs of this bird held a goatskin of yolk. Marco Polo, writing about 1300, also located the roc in the same island and related that he had heard that the Great Khan of Tartary had sent agents to Madagascar to investigate the wonderful stories told of the roc. When they returned they presented his majesty "a feather of the roc, positively affirmed to have measured ninety spans, and the quill part to have been two palms in circumference." The people of Madagascar told Marco Polo that the roc, said to resemble an eagle but incomparably greater in size, made its appearance from the southern region at a certain season of the year. This bird was large and strong enough to seize an elephant in its talons, lift it into the air and drop it to the ground in order to kill it, so the bird could feast on the carcass. "Persons who have seen this bird," wrote the Venetian traveler, "assert that when the wings are spread they measure sixteen paces in extent, from point to point; and that the feathers are eight paces in length, and thick in proportion." These undoubtedly are vague and inaccurate references to the Aepyornis or elephant bird of Madagascar, which became extinct two or three centuries ago. The largest of these ostrich-like birds, standing ten feet in height, laid eggs that were as large as medium-sized pumpkins and contained between two and three gallons of liquid. One of these giant eggs preserved in the British Museum has a capacity of about two and a third gallons. Of course the elephant

bird was flightless and not predatory and therefore not a true counterpart of the roc in nature, but its great size would be all that was necessary to set the imagination of Oriental writers on fire. *Roc's egg, like mare's nest*, means some prodigious or marvelous thing existing only in the imagination. The moas, which became extinct in New Zealand about the time Captain James Cook visited those islands in 1769, are the largest real birds known to science. Some of these ostrich-like birds are known to have stood twelve feet high and a few of the tallest may have reached a height of sixteen feet. Ostriches, largest living birds, seldom attain a height greater than eight feet. The eggs of the moa were larger even than those of the elephant birds of Madagascar. Numerous moa skeletons have been found. The bones representing the skeletons of hundreds of these giant birds have been unearthed in upland swamps near Oamaru on the South Island of New Zealand. It has been suggested that these "moa cemeteries" were formed when the birds came to drink from hill lagoons and broke through the crust of the swamps. Silt and heavy deposits of blue clay have preserved their bones for centuries. The remains of few moa eggs have survived, a fact that has suggested the theory that these birds may have become extinct as the result of the cannibalistic habit of eating their own eggs when there was a shortage in the supply of their natural food. The largest known bird of prey was the now extinct Harpagornis, also a native of New Zealand. Larger than any existing species of eagle, it was probably able to kill a moa, but not to carry it off.

Who first said: "March comes in like a lion"?

"March comes in like a lion and goes out like a lamb" is an English proverb of unknown origin. It is first alluded to in print in *A Wife for a Month*, written in 1624 by John Fletcher (1579-1625), who collaborated on many plays with Francis Beaumont and who probably collaborated with Shakespeare on *The Two Noble Kinsmen* and *King Henry VIII*. In *A Wife for a Month* one character says, "I would choose March, for I would come in like a lion," and another rejoins, "But you'd go out like a lamb." The proverb originally appears to have meant simply that the month of March is the bridge between two seasons and begins with bleak, bitter and blustery winds and rough weather and winds up with mild breezes and gentle weather. But it has been twisted into a sort of weather sign and taken to mean that "If March comes in like a lion it will go out like a lamb." This notion of the saying is not borne out in our latitudes by weather records.

March, as the name of the third month in the year of the Julian and Gregorian calendars, is derived indirectly from Latin *Martium*, the Roman god of war, and literally signifies "month of Mars."

What do *Patagonia* and *Tierra del Fuego* mean?

The part of South America extending south of the Rio Negro to Magellan Strait was originally called Patagonia by the Spanish, and the archipelago and islands south of the strait were called Tierra del Fuego. While on his historic voyage around the world in 1520 Ferdinand Magellan explored that entire region in search of a southwestern passage to the East Indies. Some of the Spaniards noticed very large footprints on the beach. One morning a native of huge stature came down to meet the explorers, who were impressed by his exceptionally big feet. From this circumstance they named the region Patagonia, from Spanish *patagon*, "clumsy big foot." Although the Tehuelche Indians of Patagonia are considered one of the tallest races in the world, their stature was greatly exaggerated by the early Spaniards. Antonio Pigafetta, who went with Magellan as a volunteer and who wrote an account of the expedition, referred to the native who came down to greet them as so large "that we reached only to his waist-belt." The Patagonian area was divided between Argentina and Chile in 1881 and its permanent boundaries were determined in 1902. Patagonia in Argentina is nearly as large as Texas, having an area of some 259,000 square miles—about a fourth of the area of the republic. During their winter's stay in the vicinity of Magellan Strait the Spaniards never caught sight of a single native on the islands, but in the daytime they could see smoke arising, apparently from campfires, and in the night they saw flickering fires in the distance. Accordingly they called the region *Tierra del Fuego*, "Land of Fire." The natives there are among the most primitive people in the New World and some authorities believe that in the time of Magellan they kept their fires burning continuously because they had not learned how to rekindle them. The Yahgans, a dwindling tribe of Fuegians, are the southernmost people in the world. Part of the original Tierra del Fuego is now in Argentina and part of it in Chile.

Which is correct, *humblebee* or *bumblebee*?

Bumblebee and *humblebee* are both applied to a family of large, hairy, social, wild bees and they mean the same thing. They were suggested by the buzzing, humming, droning sound made by the rapid wing motions of these insects. Neither is a mere variant of the other

but each had a separate origin. The first element in the one is akin to *boom* and that in the other to *hum*. Sounds made by bees, like those uttered by ventriloquists, contain no true consonants and are really a series of vowels. For that reason it is hard to trace the history of words of onomatopoeitic or echoic origin, that is, words originally suggested by natural sounds. In such cases the consonant sounds are supplied by the human imagination. The bumblebee or humblebee in some sections of England is called *dumbledor*, the last element of which is from Anglo-Saxon *dora*, related to *drone* and signifying the same. *Dora* survives in *dorbeetle*, *dor bug* and several other words. According to the Oxford dictionary, *humblebee* occurred in English as early as 1450 and *bumblebee* as early as 1530. Both are probably much older. Shakespeare uses *humblebee* several times but *bumblebee* not at all. The name of the genus to which these bees belong is *Bombus*, Latin for "buzzing" or "humming." *Humblebee* is akin to Dutch *hommel bee* and German *Hummel bee*. In Middle English *humblen* signified "to hum" or "to make a humming noise." M. Schele de Vere, in *Americanisms; the English of the New World* (1872), wrote: "In Scotland the sound of the bee is called *bumming*, and hence the insect was first called *bumb-bee*, and then *bumble-bee*, the second *b* having been produced by education." *Humblebee* has long been more common in British than in American usage. Even in England there is a growing tendency to use *bumblebee* to the exclusion of *humblebee*, although the latter is far from obsolete. In *Modern English Usage* H. W. Fowler says *bumblebee* is preferable "because its imitative origin is more apparent."

What are eyestones?

Eyestones are various small, smooth objects that were commonly used by the "medicine women" of former generations to remove cinders, dust particles and other foreign substances from the eye. One of the favorite objects for this purpose was the operculum of a small marine shell. This is merely a small lens-shaped piece of calcareous shell that was inserted under the lid of the eye, usually in the inner corner. The eyestone generally works its way across the eye and out of the outer corner, often carrying the foreign matter in the eye with it. *Golden ointment* is the name given to any kind of eye salve. It was suggested by an ancient belief that rubbing the eyes with a gold ring would cure them of various disorders. *Ointment*, now signifying an external remedy consisting of a fatty substance in which medicine has been incorporated, is derived through Old French from

Latin *unguo*, "smear." *Uction* and *anoint* are indirectly from the same source. *To throw dust in one's eyes*, meaning to mislead, was suggested by a Moslem practice of tossing dust in the air to "confound the enemies of the true faith."

Why is a kind of ale called porter?

Porter in this connection is short for *porter's ale* or *porter ale*. The term has been used in the sense of a kind of "small ale" at least since 1725. Porter's ale was originally a mixture of ale and stout and was so called because it was a favorite drink of porters. *Porter* is derived from Latin *portare*, "carry," "convey" or "transport," and at one time carriers and laborers of all sorts were called porters. Modern porter is basically the same as beer, ale and stout. It is a dark-brown, heavy, English malt liquor, rich in saccharine matter and containing about 4 per cent of alcohol. George Washington was fond of this kind of ale or beer and often drank porter at his meals. A place where porter and ale were sold at retail was called a porterhouse or alehouse. *Porterhouse* in this sense was used in America as early as 1800. Food was often served in porterhouses and the term in time became synonymous with *chophouse* or *restaurant*. The porterhouse steak is supposed to have received its name from its having been a favorite at a porterhouse or at the porterhouses of New York. There are many stories relating the exact circumstances under which the porterhouse steak got its name, but none of them can be confirmed. A porterhouse steak is a thick, juicy, choice beefsteak cut from between the sirloin and the tenderloin. Some authorities believe that *porterhouse steak* was suggested by some early hotel named the Porter House after the analogy of *Parker House roll*, which takes its name from the Parker House, a hotel in Boston established by Harvey D. Parker, who first served hot, soft rolls made from flat circular pieces of dough folded over.

What is a hecatomb?

The slaughter of a large number of victims is popularly called a hecatomb. Literally the term means "a hundred oxen." In Greek mythology the hecatomb was the sacrifice of a hundred cattle to a god at one time.

How are *Uruguay* and *Paraguay* pronounced?

Paraguayans pronounce the name of their country *PAH-rah-gwy*, while English-speaking people generally pronounce it *PAIR-a-gway*. Uruguayans pronounce the name of their country *OO-roo-gwy*, while

English-speaking people generally pronounce it *YOU-ru-gway*. But even in English the third syllable in both names is sometimes given the long *i* rather than the long *a* sound. These republics took their names from rivers, which in turn received their names from native tribes. The exact meaning of the names is uncertain. Some authorities suppose that *Uruguay* is derived from Guarani Indian *uru*, "bird," and *guay*, "tail," and that the Uruguay River was called "bird's tail" in allusion to a falls in the stream that fanned out like a bird's tail. Others think the name literally means "river of birds" in the Charuan language. *Paraguay*, according to the accepted theory, is a Guarani phrase signifying "river of parrots." Whether the last element in the two names originally meant the same thing is not clear. When what is now the capital of Paraguay was founded in 1537 by the Spanish it was called *Nuestra Señora de la Ascunción*, "Our Lady of the Assumption." The capital of Uruguay, founded as a city in 1726, was named *San Felipe y Santiago de Montevideo*, "St. Philip and St. James of Montevideo." There are two theories as to why the place was called Montevideo, the general meaning of which is "mountain view." According to one, a Portuguese lookout on a ship caught a glimpse of a hill in the vicinity and shouted, *Monte vide eu!* "I see a mountain." According to the other, *Montevideo* originated in a combination of abbreviations in early manuscripts relating to the region. In Spanish the name is pronounced *MOAN-tay-vee-THAY-oh*; in English it is generally pronounced *monn-ta-VIDD-e-oh*. The Jesuits established permanent missions in Paraguay in 1605. They gradually organized and armed the natives and for generations comprised a "supergovernment" in Paraguay. The last vestiges of the utopian experiment of a Jesuit free state in Paraguay ended when the Jesuits were expelled from the country in 1769. In 1814, soon after Paraguay's liberation from Spain, Dr. José Gaspar Rodríguez Francia became dictator and ruled the country until his death in 1840. He decreed that all Paraguayan men must wear hats so they could show proper respect to superiors by removing them. The dictator also forbade the utterance of his own name and required his people to refer to him only as *El Supremo* on pain of death. Francia was succeeded by his nephew Carlos Antonio López, who was succeeded in 1861 by his son Francisco Solano López. Between 1865 and 1870 López fought the combined military and naval forces of Brazil, Argentina and Uruguay. When the war started Paraguay had 1,337,000 inhabitants; when it ended there were only 106,000 women, 86,000 children and 29,000 men left living in the country. Of 30,000 Paraguayan army and naval officers General

Barnardino Caballero alone survived. The allies lost about a million men. Virtually all farming, industry and normal activity in Paraguay was destroyed. This accounts for the fact that Paraguay later encouraged all sorts of immigrants to settle in the country. There are some sixty colonies of various foreigners in Paraguay with a large measure of local self-government.

Why is a hotel proprietor called a boniface?

Boniface as a facetious generic nickname for hotel proprietors and innkeepers is an allusion to Will Boniface, a distinctively original character in *Beaux' Stratagem*, the best of the plays of George Farquhar (1678-1707), Irish-born British dramatist. Farquhar died before he was thirty and *Beaux' Stratagem* was first produced on the London stage in 1707 three days before the author's death. This play was very popular and kept the stage for years. There were nineteen revivals of it up to 1828. In the play Will Boniface is the landlord of an inn at Lichfield, England. He is sleek, jovial, good-natured, a thorough rascal—and in league with the highwaymen. *Beaux' Stratagem* is also the source of *Lady Bountiful* in the sense of a conspicuously beneficent woman. The original Lady Bountiful was a country gentlewoman noted for her benevolence to the poor. Farquhar, one of the best playwrights of his generation, started out to be an actor on the Dublin stage. He quit the stage because, while playing in Dryden's *Indian Emperor*, he failed to exchange his sword for a foil and almost killed a fellow actor.

Who said: "I am monarch of all I survey"?

Apparently the English poet William Cowper (1731-1800) was author of the familiar saying, "I am monarch of all I survey," in that particular verbal garb. In 1782 Cowper published his first volume of verse. It contained a poem entitled *Verses supposed to be written by Alexander Selkirk*, the first stanza of which runs as follows:

I am monarch of all I survey,
My right there is none to dispute;
From the center of all round to the sea
I am lord of the fowl and the brute.

Selkirk was the Scotch seaman who lived alone for more than four years on one of the Juan Fernández islands in the Pacific and whose experiences supplied much of the raw material for the first part of Defoe's *Robinson Crusoe*. The idea expressed by "I am monarch

of all I survey" is ancient. Lucius Seneca, who lived in the days of the first Caesars, expressed it in his *Letters to Lucilius*, a collection of maxims and moral observations, one sentence in which may be roughly translated: "It is superior to all, the lord of all it surveys." Cowper was author of another famous quotation. In his *Light Shining Out of Darkness* occurs:

God moves in a mysterious way
His wonders to perform;
He plants his footsteps in the sea
And rides upon the storm.

Other oft-quoted lines of Cowper's are from *The Task* (1785):

I would not enter on my list of friends,
(Though graced with polish'd manners and fine sense,
Yet wanting sensibility), the man
Who needlessly sets foot upon a worm.

Who determines the number of Catholic Cardinals?

The creation of cardinals rests solely with the pope. Since 1580 the Sacred College, which is the Senate of the Roman Catholic Church and which assists the pope in the administration of the church, when complete has consisted of seventy members: six cardinal bishops, fifty cardinal priests and fourteen cardinal deacons. Generally, however, there are some vacancies. The Sacred College has the responsibility of electing the pope. Cardinals have no rank in the hierarchy of the church except by virtue of their being priests or bishops. Every cardinal must reside in Rome unless he is a bishop abroad. *Cardinal* is derived from Latin *carda*, "hinge," and the cardinals were so called because important work of the church hinged on them. A cardinal's title is written and spoken between his Christian and surnames: as, James Cardinal Gibbons, not Cardinal James Gibbons. His first name was James, which distinguished him from other men named Gibbons, but his official church title was "Cardinal Gibbons."

What is a trade rat?

A large wood rat found in the western United States, Canada and Mexico is known as the trade rat or pack rat from its habit of carrying all sorts of things from one place to another and sometimes leaving something else in exchange. This species, of which there are eight known subspecies differing chiefly in coloration, has prominent

whiskers and a long, bushy, squirrel-like tail. These bushy-tailed mountain and wood rats do not confine their thievery to things they can eat or use in their nests. Stolen articles may be replaced with anything from mere rubbish to valuable gems. In fact they seem to exchange articles out of sheer mischievousness. There have been many amusing reports about the pranks of these industrious rats. They are attracted to bright-colored trinkets and have been known to carry away table utensils, bits of cloth, buttons and many other articles. On one occasion trade rats removed some rice from a bowl and refilled the bowl with collar buttons. In 1943 a woman in Arizona placed small packages of poison in her garden to kill trade rats that had been eating young plants. The packages of poison disappeared the first night. On the supposition that the rats had been killed by the poison, the woman planted some more seeds. The next day she discovered that the trade rats had carried away the seeds and left in their place the tiny packages of poison they had carried away two nights before. *Trade rat* is sometimes used figuratively in the sense of "idle acquisitiveness" or "the accumulation of useless property."

How did *polemics* originate?

Polemics comes from Greek *polemos*, "war." Polemics is the art of disputation and controversy—"waging war with words."

What is *suede*?

Suede (pronounced *swayed*) is merely French for Sweden. In French, gloves made of kidskin were called *gants de Suède*, "Swedish gloves." Originally the leather used in suede gloves was skin tanned with tannic acid or formaldehyde and with the flesh side rubbed into a nap on an emery wheel. Whether *suede* was originally a trade name, or glove leather was so called because it was first made in Sweden, is not known. The term appears to be comparatively modern in English. Now a closely knitted fabric, napped and shorn to imitate suede leather and used in making gloves and handbags, is known as suede cloth or suedine. *Suede* is also now applied to a brown, reddish-yellow color.

What does *by inch of Candle* mean?

Candle auction or *sale by inch of candle* was the phrase used in England and the English Colonies to designate a public auction at which persons were permitted to bid until a small piece of candle burned out. Under date of February 4, 1710, William Byrd of Westover in Virginia wrote in his secret diary: "The sheriff of Isle of Wight

was here about the quitrents which I ordered him to sell by inch of candle." In some cases a pin was thrust through an ordinary candle a short distance from the top and the bidding went on until the candle burned down to the pin and caused it to drop into the candlestick, whereupon the last bidder was declared the buyer. *By inch of candle* was also applied to a form of ecclesiastical excommunication in which the offender was allowed time to repent only so long as a candle continued to burn.

How is the name of the Willamette River pronounced?

Few American place names are more persistently misspelled and mispronounced than that of the Oregon river that flows into the Columbia several miles below Portland. It is correctly spelled *Willamette* and pronounced *will-LAHM-et*; it is commonly misspelled *Williamette* and mispronounced *WILL-yum-ett*, as if the word consisted of the given name *William* and the diminutive suffix *ette* and meant "little William." The river was named after a tribe of Indians found living in that region by the early European explorers. It is supposed to be derived from the same root as *Walla Walla* and *Wallula* and to signify "running." No evidence supports the popular theory that the word literally means "long stream" or "large and beautiful stream." The spelling varied widely in early writings. *Walamet* is regarded as the closest approach to the aboriginal word. We find it spelled *Ouallamat* and *Ouallamet* by the first Canadian hunters, traders, trappers and forest rovers, who later substituted *i* for *a* in the first syllable and added the *ette* termination. In *Astoria* (1836) Washington Irving spelled the name *Wollamut* and explained that it was pronounced with the second syllable accented; in *The Adventures of Captain Bonneville* (1837) he spelled it *Wallamut*, apparently a deliberate change. In 1874 the Oregon legislature fixed *Willamette* as the official spelling in state laws and records.

How did Peru get its name?

Peru (pronounced *PAY-roo* by Peruvians) is of uncertain origin. It is generally believed to be derived from *biru*, a native word meaning "river." According to the generally accepted story, when Francisco Pizarro and his gold-hungry followers arrived in what is now Colombia they asked the Indians where their gold ornaments came from. The natives said *Biru* and pointed southward toward the Iscuander River. The Spaniards mistook *Biru* for the native name of the territory and the term, corrupted into *Peru*, became the Spanish name

of the region. Another story is that *Biru* was the name of a warlike cacique who ruled a small territory near the Isthmus of Darien and with whose warriors the Spaniards fought a fierce battle. Peru is bounded by more countries than any other South American country except Brazil. It touches Colombia, Ecuador, Chile, Brazil and Bolivia. Much of its territory lies in the high Andes and it contains seven peaks more than 19,000 feet in altitude. A strip along the coast, 1,400 miles long and about 30 miles wide, is almost a desert and receives little water except from mountain streams. Lima (pronounced *LEE-mah* by Peruvians) was called the City of Kings when it was founded in 1535 by Pizarro. The word is a modified form of *Rimac*, the name of the river on which the city is situated. The Lima cathedral was also founded by Pizarro. Landlocked Bolivia (*Republica Boliviana*), the only South American country without access to the sea directly from its own ports, was at one time known as Upper Peru. It received its modern name from Simon Bolivar, who is known as the Liberator and the George Washington of South America because he led a series of revolutions and military campaigns that resulted in liberating six countries from Spanish rule—Venezuela, Colombia, Ecuador, Panama, Peru and Bolivia. In fact the liberation of all South and Central America resulted largely from the activities in which he played a major part. Because of its magnificent mountain scenery Bolivia is known as “the Switzerland of South America.” In the time of Prime Minister William E. Gladstone Great Britain refused to recognize Bolivia as a separate nation because the Bolivian minister had made a comment reflecting on the honor of Queen Victoria. Some official British maps of the time showed Bolivia as part of Paraguay. The Bolivian monetary unit is called *boliviano*. Bolivia and Peru together have an area of more than a million square miles, the former being somewhat the larger.

Which is correct, *Persia* or *Iran*?

It is a mistake to suppose that Persia changed its name to Iran in recent years. *Iran* (pronounced *ee-RAWN*) has been for centuries the official name of the Asiatic country that foreigners call Persia. In ancient times part of this country comprised a kingdom known as Pars, and when the Greeks began to have intercourse with Iran they called it Persia, the name of one province and the ancient name of part of the territory. The ancient kingdom of Pars constituted the present province of Fars, which lies in the southwestern part of Iran and which touches the Persian Gulf. While the inhabitants called

their country Iran and themselves Irani (*ee-RAWN-ee*), their government for convenience recognized *Persia* as the name of the country and *Persians* as the name of the inhabitants in diplomatic language and in external affairs. Early in 1935 the Iranian government advised all foreign governments that it had formally adopted *Iran* as the official name of the country in external as well as internal matters. In other words, the Iranian government insisted upon being called by its official name by foreigners. The order took effect on March 22, the Iranian New Year's Day. The United States Department of State announced that it would comply with the request and substitute *Iran* for *Persia* in diplomatic usage. On February 14, 1935, Second Assistant Postmaster General Harilee Branch published the following communication: "The Department has been advised that the country which has heretofore been designated as *Persia* should henceforth be known as *Iran*, the official name in the language of that country. In view of the foregoing, appropriate changes should be made on pages 203, 207, 211, 225 (see *Teheran*), 235, 241, 243, 244, 246, 265, 517, 518, and 519 of the Postal Guide for July, 1934. Postmasters will please cause due notice of the matter to be taken at their offices, and the widest publicity, without expense to the Department, to be given thereto." Other countries followed suit, but the British government apparently did not like the idea. On February 19, 1942, Richard K. Law, British undersecretary for foreign affairs, told the House of Commons that officials would be instructed to use *Persia* instead of *Iran* "so far as is practical." In 1946 former Prime Minister Winston Churchill said he objected to *Iran* because it is easily confused with *Iraq*, the name of an adjoining country. *Iran* is derived from the same Sanskrit root as *Aryan*. All Aryans are supposed to have sprung from a tribe of farmers on the Iranian plateau. The Old Persian form of the word is *Ariya* and that was the name that the ancient Persians applied to themselves.

What is poplin?

Poplin was originally applied to a mixed woven fabric consisting of a silk warp and worsted weft and having a corded surface. Such fabric was so called because it was first made during the sixteenth century in the "papal city" of Avignon on the Rhone River in southeastern France. Avignon was the seat of the popes from 1309 to 1377 and continued to be a papal possession until it was taken over by France in 1791. The most important fabric manufactured at Avignon was called by the Italians *papalino* (feminine *papalina*), literally

"papal" or "pertaining to the pope." In French the term became first *popaline* and then *popeline*. About 1700 the English shortened it to *poplin*. In time the term came to be applied to corded fabrics of many varieties used in making women's dresses. Modern poplin is made chiefly in Ireland. A fabric of wool or linen made in imitation of poplin has been called *poplinette* since about 1860.

What is the meaning of "Nine tailors make a man"?

This saying is generally misinterpreted through confusion with another, "The tailor makes the man," meaning a man is judged by the clothes he wears. In *Hamlet* Polonius tells his son that "the apparel oft proclaims the man." But "Nine tailors make a man" has a different meaning. There are several theories as to how it originated. It seems to be the result of the fusion of several ideas and sayings. Perhaps originally it signified that several tailors are the equivalent of one person. That tailors were an inferior breed was a common notion in the sixteenth and seventeenth centuries. Shakespeare and other Elizabethan writers seldom mentioned tailors except to disparage or ridicule them. Tailors were the butt of all sorts of crude jokes, and early English literature is interspersed with jests at their expense. They are generally referred to contemptuously as gossips, knaves, pettifoggers or rascals. The idea seems to be that their trade and the cramped position in which they worked stunted them both physically and mentally to such an extent that it took several of them to equal a normal person. Some authorities suppose that "Nine tailors make a man" was an old Breton saying that the English borrowed from the French about 1600. However that may be, the original saying in English appears to have been "*Three* tailors make a man." In *Northward Hoe* Thomas Dekker and John Webster wrote in 1605: "They say three tailors go to the making up of a man." John Taylor, the Water Poet, in 1630 wrote:

Some foolish knave at first began
The slander that three tailors are one man.

But in 1639 John Cleveland, whose poetry was reputed in that day to be superior to that of his contemporary John Milton, wrote:

Like to nine tailors, who, if rightly spell'd
Into one man are monosyllabel'd.

Thomas Carlyle, in *Sartor Resartus* (literally "Tailor Retailored") said: "Does it not stand on record that the English Queen Elizabeth,

receiving a deputation of 18 tailors, addressed them with a 'Good morning, gentlemen both!' " These quotations all tend to discredit the generally accepted theory that "Nine tailors make a man" was suggested by the fact that the London tailors were highly specialized and that it took several of them to make a suit of clothes. Another theory is that the saying was the result of a series of puns on "Nine tellers mark a man." In olden times at funerals the church bell was tolled three times for a child, six times for a woman and nine times for a man. The tolls were called *tellers*. Hence, "Nine tellers mark a man"; that is, nine tolls of the bell denoted that a man and not a woman or child was being buried. Through facetiousness or error this may have been corrupted into "Nine tailors make a man."

How do *bazaar* and *bizarre* differ?

Bazaar, meaning place where goods are exhibited for sale, is derived from a Persian word signifying a permanent market or a street of stalls or shops. *Bizarre*, meaning strikingly different, comes from Italian *bizarro*, "gallant," "brave" or "liberal." There appears to be no connection between the two words.

What is the Portland vase?

The Portland vase is a rare and beautiful burial urn found about 1560 in a marble sarcophagus under the Monte del Grano near Rome. It is believed to have been the work of a Greek artist in Rome and to have contained the ashes of the Roman emperor Alexander Severus, who died in 235 A.D. The urn was kept for more than two centuries in the Barberini Palace in Rome and is sometimes known as the Barberini vase. In 1770 an antiquarian named Byers bought it from the Barberini family and resold it to Sir William Hamilton for 1,000 guineas. Sixteen years later the Duchess of Portland paid 1,800 guineas for it at a public art auction in London. In 1810 the Duke of Portland, a trustee of the British Museum, lent it to that institution for exhibition but retained the family title to it. The urn, which has two handles, is nearly ten inches high and slightly over seven inches in diameter at the broadest part. It was made by covering molten transparent dark blue glass with opaque white glass cut in cameo style. The scenes contain Greek mythological figures believed to portray the story of the marriage of Thetis and Peleus. In 1845 a mad mechanic named William Lloyd maliciously smashed the priceless urn into a hundred pieces with a Babylonian brick that he picked up in the museum. He was tried, but the offense was not punishable under the law

because the vase was not the property of the trustees. Lloyd got off with a three-pound fine for destroying a glass shade covering the vase that belonged to the museum. Parliament immediately made such offenses punishable with two years' imprisonment. An expert joined the prices so skillfully that the damage is scarcely visible. Since then the Portland vase has not been exhibited to the general public and has been guarded day and night by guards specially paid for that purpose. Rare and beautiful copies have been made by Josiah Wedgwood, John Northwood and other artists. In 1946 title to the Portland vase was acquired by the British Museum as the result of a bequest.

How is *Delhi* pronounced?

Delhi, the name of the capital of British India, is pronounced *dell-i*, with the *i* short as in *it*. The city is sometimes called Old Delhi to distinguish it from New Delhi, the winter capital a short distance to the south. *Delhi* is from a Sanskrit root meaning "eminence" or "elevation." As a place name in the United States *Delhi* is pronounced *DELL-high*.

What does *supercilious* mean?

Supercilious is derived from the Latin words *super*, "over" or "above," and *cilium*, "eyelid." The underlying idea of *supercilious* is similar in origin to that expressed by the homelier Anglo-Saxon *highbrow*. Raising the eyebrows is the proverbial gesture of pride, haughtiness and superciliousness.

What is a Bohemian?

The Romans applied *Bohemia* to a region on their northern frontier because it was inhabited by a Celtic tribe known as the Boii, whose capital was Boiohemum. A Slavic people who established themselves in Bohemia about the beginning of the Christian Era called themselves Czechs and their country Czechy. But the Romans and other Europeans continued to call the country Bohemia and the inhabitants Bohemians. Teutonic and Slavic peoples struggled for the possession of Bohemia for nearly a thousand years. During the Thirty Years' War Bohemia was almost depopulated. She lost her independence and passed under the Austrian yoke in 1620 when the Czechs were defeated by Frederick V, Elector of the Palatinate, at the Battle of the White Mountain near Prague. Bismarck, because of its strategic location, said: "Who dominates Bohemia dominates Europe." Bohemia lay directly in the path of *Drang nach Osten*, "the thrust toward the

east," a phrase used in connection with Germany's policy of expansion in the direction of Asia. During the First World War Thomas G. Masaryk and Eduard Beneš built up public opinion throughout the world in favor of an independent country composed of Bohemia, Slovakia, Moravia, Silesia and Carpathian Ruthenia. Nearly a million dollars for this purpose was contributed by Czechs and Slovaks in America, Russia and France. Although their native land was then part of Austria-Hungary, several hundred thousand Czechoslovaks fought on the Allied side during the First World War in France, Italy and Russia. After the collapse of Russia in 1917, about 92,000 Czechoslovakian troops who had been fighting in that country, known as the Czech Legion, joined the Allies in the west after an amazing expedition in a body through Siberia to Vladivostok and then to France. In 1918 Bohemia became part of the country known popularly as Czechoslovakia and officially as the Czechoslovak Republic because Czechy and Slovakia were the two chief units of the new nation. Before the First World War and the creation of the Czechoslovak Republic those Czechs who had immigrated to America, as well as their immediate descendants, were popularly called Bohemians, or simply Bohemies, but that term is being gradually replaced by *Czechs* in American usage. The religious sect known as the Moravians in America are the successors of the Bohemian Brethren, a sect formed from the remnants of the followers of John Huss (1369-1415), a reformer who was burned at the stake for preaching doctrines in Bohemia similar to those preached by John Wycliffe in England. The Germans in Czechoslovakia are called Sudetans (pronounced *soo-DETT-ans*) because large numbers of them lived along the Czech-German border in the region of the Sudetic Mountains. When the first band of gypsies arrived in France about 1427 the French supposed them to be Hussites expelled from Bohemia and called them *Bohémiens*, which is still the French name for "gypsies." From this source came *Bohemian* in the sense of an idle stroller or one who wanders about like gypsies. William Makepeace Thackeray popularized *Bohemian* in the sense of an artist, actor, writer or other intellectual who, like the gypsies or *Bohémiens*, lives a free and easy life in violation of accepted social conventions.

Who first said: "Murder will out"?

"Murder will out" is a very old phrase in the English language and it is of unknown authorship. The idea expressed by it occurs in *Cursor Mundi*, a work written by an unidentified hand about 1290. The phrase occurs twice in Geoffrey Chaucer's *The Canterbury Tales*,

written about 1386. "Murder will out, certain, it will not fail" is found in *The Prioresses Tale*, and "Murder will out, that see we day by day," in *The Priests Tale*. Shakespeare alludes several times to the same notion. In *Richard III*, Act 1, scene 4, the First Murderer, who had just helped to kill the Duke of Clarence, says: "For this will out, and so I must not stay." Launcelot Gobbo, in *The Merchant of Venice*, Act II, scene 2, says: "Murder cannot be hid long; a man's son may; but, at the length, truth will out." The Prince of Denmark, in *Hamlet*, Act I, scene 2, says:

Foul deeds will rise,
Though all the earth o'erwhelm them, to men's eyes.

And again in Act II, scene 2:

For murder, though it have no tongue, will speak
With most miraculous organ.

In *Idea*, written about 1627, Michael Drayton wrote: "Yet heav'n will still have murder out at last." In the fable of *The Cock and the Fox* John Dryden wrote:

Murder may pass unpunish'd for a time,
But tardy justice will o'ertake the crime.

Despite the proverbial notion that murderers will be found out sooner or later and properly punished, large numbers of murders committed throughout the world are never solved.

What is a holocaust?

Many go wrong on *holocaust*. There seems to be a widespread impression that this term means simply a "great disaster." It is derived from Greek *holo*, "whole," and *kaustos*, "burnt." Originally a holocaust was a sacrificial offering the whole of which was consumed by fire. Figuratively the term is properly applied to the destruction of a large number of human beings by fire but not by water or other elements. From the same source come *caustic* and *cauterize*. A caustic remark is one that burns. To cauterize the flesh is to burn it.

When was snuff first used?

Snuff made from the leaves of tobacco and other plants originated in the New World in pre-Columbian times. Members of the second Columbus expedition in 1493-1496 first noted its use by some of the natives in the West Indies and Central America. The Spaniards intro-

duced the snuff habit into Spain, whence it gradually spread to Portugal, France and the rest of the world. A pinch of snuff was supposed to be good for colds and to "clear the head" and its use was encouraged among Europeans because of the belief in its medicinal virtue. In England and her Colonies snuff taking, particularly among the upper classes, became widespread in the seventeenth century. Snuff containers made of the windpipes of cattle were called "weasands." During the later part of the eighteenth and the early part of the nineteenth centuries snuff taking by both men and women was a mark of quality and gentility. Frederick the Great, Marie Antoinette, Joseph Addison, Alexander Pope, Dr. Samuel Johnson, Robert Burns, Dolly Madison and Napoleon were habitual snuff users. It was fashionable for people of the upper classes to carry beautifully ornamented rectangular or circular snuffboxes. Kings, princes and other notables presented snuffboxes as marks of their favor. Often snuffboxes were made of delicately carved wood or ivory, inlaid with gold or silver, decorated with diamonds or other jewels and with cameos of relatives, friends or famous persons set in the lids. Tapping, opening and offering a snuffbox developed into a ritual of etiquette. "The snuff-box," wrote George Borrow in *The Bible in Spain* (1843), "is the olive branch of the Portuguese, and he who wishes to be on good terms with them must never refuse to dip his finger and thumb into it when offered." Snuff taking lost its social standing as its use spread from the aristocracy to the common people. The change in the class of users resulted in the virtual disappearance of personal snuffboxes and the introduction of moist snuff. Originally snuff was merely dry tobacco ground fine and was often referred to as "dust." The father of Gilbert Stuart, the portrait painter, was a snuff grinder by trade. Dry, powdered tobacco was called snuff because it was sniffed or snuffed up the nose. Moist snuff is not "pinched" from a special container but is "dipped" from the tin can in which it is distributed. Neither is it inhaled but put into the mouth and either chewed or lodged between the gums and the cheek. Modern snuff making is a complex process. Sometimes it is made from the scraps, waste pieces and residue of ordinary tobacco, but the best product is made from the thick, fleshy part and the midribs of the leaves of dark tobacco that has been fire-cured and seasoned for a considerable period. The tobacco is blended, moistened, salted, scented, flavored with licorice, tonka beans or other ingredients, fermented, dried and pulverized. Walter Garrett became a multimillionaire manufacturing snuff. Snuff has more "kick" in it than ordinary tobacco because of the free nicotine

and ammonia and the aromatic qualities generated by fermentation. The use of snuff is not dying out and snuff dipping is far from a lost art. In 1880 less than four million pounds of snuff was made in the United States; in 1943 the annual production was forty-three million pounds—nearly a third of a pound for every man, woman and child in the nation. The federal tax was 18 cents a pound and the revenue from this source amounted to about \$7,740,000. The chief users in the the United States were Negroes and white laborers and farmers in the South, industrial workers in the Northeast and persons of Scandinavian extraction in the Northwest. Snuff taking, like tobacco chewing, increased during the Second World War because smoking was forbidden in many war plants and factories. "White snuff," which does not "stain the handkerchief," was put on the market in Britain during the war.

Why does snow melt around trees?

After a heavy snow there is usually an open place around each tree. This is due to the fact that the trunk of the tree reflects sunlight and melts the snow. As a rule the temperature of snow itself is several degrees higher than the surrounding atmosphere. When the temperature of the air is below freezing the temperature of snow on the ground is generally from three to four degrees warmer than the air over it. Snow is composed of about nine-tenths air and only one-tenth water. A blanket of snow on unfrozen land—often called "the poor man's manure"—protects crops from winter kill by preventing the warmth of the ground from escaping.

Who invented glass?

When, where and by whom glass was first made is not known. Legend says the Phoenicians accidentally discovered glass when they placed cooking pots on blocks of natron (subcarbonate of soda) and found a crude form of glass produced by the union of alkali and the sand on the seashore. Although this was not true glass, some such experience may have prompted the earliest experiments that resulted in early man's conversion of sand, soda, potash and lime into the amazing substance known as glass. A piece of glass in the British Museum is supposed to have been made at least 5,000 years ago. Archaeologists have found glass beads in Egyptian graves believed to date back to 4000 B.C. Glassmaking reached a high degree of perfection in the early days of the Roman Empire. Emperor Nero paid the equivalent of three million dollars for a vessel of rare glass. Window glass was found in

the ruins of Pompeii; apparently glass was first used in windows about the beginning of the Christian Era. Pliny says that in his day glass was made from the fine sand found in Syria and Palestine. Glass windows may have been introduced into England by the Romans. Such windows were rare until about the eighth century and not common until the fourteenth or fifteenth century. Several glassmakers migrated to Virginia in 1608 and set up a crude glass furnace near Jamestown. This first American glassworks, however, was completely destroyed by the Indians in the massacre of 1682. A few years later another glass factory was established near Jamestown and began to make glass for windows, bottles and beads for the Indian trade. The American Indians, of course, had not learned how to make glass.

Is crocodile meat edible?

The meat of crocodiles, alligators and gavials is sometimes eaten by man. Persons who have eaten it report that it is comparable to pork in taste and tenderness when well cooked. The tail is regarded as the most palatable part of these reptiles. Crocodile tail is reputed to be as tender and delicious as veal. Herodotus reported that some of the ancient Egyptians regarded the crocodile as sacred, while others were "so far from considering these animals as sacred that they even eat their flesh."

What country was named after a dyewood?

Contrary to what one might naturally suppose, Brazil was named after brazilwood, not the wood after the country. Long before the discovery of America, *brasil* (variously spelled) was the commercial name of sapan, an East Indian tree from which a red dyewood was obtained. Writing about 1300, Marco Polo said the islands off the coast of India produced large quantities of sapanwood for dyeing. Of the kingdoms of Lambri and Fanfur he wrote: "They sow brazil and when it springs up and begins to throw out shoots, they transplant it to another spot, where it is suffered to remain for three years. It is then taken up by the roots and used as a dyestuff." Marco Polo brought some of the seeds of this plant with him to Venice and sowed them there, but "the climate not being sufficiently warm, none of them came up." Chaucer, writing in the latter part of the fourteenth century, spelled the name of the dyewood *brasile*, which is the modern Italian spelling of the name of the South American country. In the sense of a dyewood the term is of unknown origin. Some etymologists derive it from Portuguese *braza*, "burning coal"; others from Arabic *bakkam*, "red dye."

wood," and still others from *beas* and *ail*, two Gaelic syllables applicable to man or island and highly commendable in connotation. It has been argued, but not very convincingly, that *Brazil* is merely a corruption of *Brendan* or *Brandon*. According to a medieval story, regarded as legend by some and as history by others, an Irish abbot now known as St. Brendan sailed west from Ireland in the sixth century in quest of the land of promise and returned after an absence of seven years with reports of an earthly paradise that he had visited. This land of mystery in the Atlantic is supposed to have been an island or a part of the American mainland. Pre-Columbian maps show an island called St. Brendan or St. Brandon in the Atlantic midway between Africa and the islands east of Asia, and this island was often confused with another legendary island—the Island of Brazil. Even the Roman writer Pliny had referred to a source of dyewoods in the western ocean by the name of *Insulae Purpurariae*. On the map made at Venice in 1436 Andrea Branco designated one of the larger Azores *Ide Brazi*. When the Azores became better known this island was renamed *Terceira* and the Island of Brazil was indicated on maps several hundred miles westward. John Cabot, seeking Asia by sailing westward in 1497, had hoped to stop at the Island of Brazil. There are those who believe that this imaginary island was called Brazil, not because it was reputed to be the source of brazilwood, but because it was discovered or reported to have been discovered by an Irish navigator named Brazil, O'Brassil or some such name. The mysterious Island of Brazil seems to have been gradually pushed westward in the imagination until it was identified with Newfoundland or the neighboring shores of the continent. Columbus was on the lookout for brazilwood in 1492 and he agreed to reserve for the crown all such timber in the lands that he might discover. In 1496 the Adelantado Don Bartholomew Columbus, the admiral's brother, actually found great quantities of a kind of brazilwood in the West Indies. The region now known as Brazil was first sighted by a European in 1500 when Vicente Yáñez Pinzón, who had commanded one of the three vessels of the first Columbus expedition, visited that part of South America. Later in the same year the Portuguese Pedro Alvarez de Cabral, sailing under directions drawn by Vasco da Gama, bore so far westward on his way to India that he touched the coast of Brazil. Since this region lay clearly within the zone allotted to Portugal by a papal bull and a treaty with Spain, Cabral claimed the territory for his country. The Portuguese, who supposed the mainland to be an island and who established their first permanent settlement there in 1501, at first called the

new colony the Island of the True Cross. Amerigo Vespucci, the Florentine merchant after whom the New World was later named, visited Brazil in 1501 and 1503. In the latter year he left a garrison of twenty-four men behind and returned to Europe with a cargo of dyewood that was called *brasilwood* because it was very similar to the sapanwood imported from the East Indies. According to tradition, King Emanuel himself changed the name of the new colony from the Island of the True Cross to the Land of Brasil or Brazil after he learned that it abounded in the valuable dyewood. Whether the Portuguese were influenced by the legendary Island of Brazil in naming the colony is unknown. They must have known of the island and it is quite possible that, if they did not actually borrow the name from that source, they were influenced by the legend. The region is so vast and the settlements on the coast were so scattered that formerly the country was referred to as the Brazils. Brazil began as a colony of Portugal, and Portuguese is still the official and prevailing language of the country—the only nation in the Western Hemisphere in which this is so. In 1807 King John VI of Portugal fled from Lisbon before Napoleon's army and took refuge in Rio de Janeiro. That has been the only time in history that a European nation was ruled from the New World. King John returned to Portugal in 1821 and left his son Pedro as regent in Brazil. The next year Brazil declared its independence of Portugal and became an independent kingdom with Pedro as the first emperor. In 1831 he abdicated in favor of his five-year-old son Pedro II, who was emperor for fifty-eight years. A revolution in 1889 overthrew the monarchy and established a republic officially styled *Estados Unidos do Brasil*, "The United States of Brazil." Four of the twenty states of Brazil are larger than Texas. Nearly half of the area and population of South America are in Brazil. It has an area of 3,275,000 square miles—greater than the continental United States exclusive of Alaska—and in 1947 its population was estimated at more than 45,000,000. Brazil is touched geographically by every other South American country and colony except Chile. Rio de Janeiro (literally "River of January"), the capital and the second largest city in South America, took its name from the bay that an early Portuguese explorer is reputed to have so named because he thought it was a river and because the date was January 1, 1502. Brazil and Portugal have had many difficulties over their common language. In 1946 the two governments agreed to let the Academy of Letters in each country sponsor a system of pronunciation and spelling of Portuguese to be accepted as standard for both Portuguese and Brazilians. The conventional English spelling of

the name of the South American republic is and always has been *Brazil*. For many years *Brasil* and *Brazil* were used interchangeably by the Brazilians themselves. It was not unusual to see the word spelled with a *z* in one government document and with an *s* in another. Numerous books and articles were written with a view of putting an end to this orthographic anarchy and getting the government to adopt an official spelling. Finally a decree was issued fixing *Brasil* as the official and correct spelling of the name in Portuguese.

What is Couéism?

Couéism (*koo-AYE-iz'm*) is defined by *Webster's New International Dictionary* as, "A system of psychotherapy, introduced by Emile Coué (1857-1926), based upon autosuggestion of health and general well-being and improvement." Dr. Coué, a Frenchman, taught his patients or disciples to repeat the healing formula. "Every day, and in every way, I am getting better and better" (*Tous les jours, à tous points de vue, je vais de mieux en mieux*). He first announced this formula in France about 1910, but it did not become well known in America until its author visited the United States after the First World War. Coué's treatment was based on the principle that a patient who feels that he will get well has a better chance to recover than one who has given up hope.

How did Argentina get its name?

The coast of what is now Argentina was first explored in 1516 by an expedition headed by Juan Diaz de Solis, pilot major of Spain, who was killed in a battle with the Charruan Indians. The survivors of this expedition reported that they had discovered a great fresh-water sea, which they thought might provide a southwest passage to the East Indies. In 1520 Ferdinand Magellan, on his celebrated voyage around the world, explored "the sea of fresh water" just enough to satisfy himself that it was the estuary of a large river. In 1526 Sebastian Cabot, who had succeeded De Solis as pilot major of Spain, was sent to explore the region and establish settlements there. He spent three years in the territory but was finally compelled to leave because of the hostility of the natives. In trading with the Indians Cabot obtained a number of silver ornaments. Back in Spain these trinkets, though of small value, raised the hope that the region might contain great mineral riches. Therefore the Spanish called it the Argentine and what they supposed to be a great river Rio de la Plata. *Argentine* is derived from Latin *argentum*, "silver," which in turn was from Greek

argos, "bright" or "shiny." The last element in *Rio de la Plata* is Spanish for "silver." *Plate* in the sense of dishes, knives, forks, spoons and other tableware—that is, silverware in a generic sense—is from the same source. Later it was learned that the great expanse of water was not a river but the estuary of two rivers—the Paraná and the Uruguay. On May 25, 1810, the people of Buenos Aires forced the Spanish viceroy to resign and a new government for the United Provinces of the Rio de la Plata was formed. After complete independence of Spain was declared in 1816 the Argentine became *Republica Argentina*, "Argentine Republic." Although the country had the 225-mile-long estuary of the Paraná and Uruguay rivers bear names meaning "silver," very little silver has been produced in that part of South America. The population of Argentina has a larger percentage of people of European descent than any other Latin American republic. There are virtually no Negroes in the country, and fewer than 2 percent of the inhabitants have non-Caucasian blood. A native of Argentina is called an *Argentino* in Spanish and an *Argentine* in English.

How are mirages produced?

A mirage is an optical effect or atmospheric illusion produced by the irregular refraction and reflection of light rays as they pass through layers of air of unequal density. This phenomenon, observed since ancient times, is especially common in hot desert regions and was first brought to the attention of the scientific world and correctly explained by a French physicist named Gaspard Monge who accompanied Napoleon to Egypt and who described the mirages seen in the desert by the French soldiers. *Mirage* is derived from Latin *mirare*, "to look at" or "to wonder at," which is also the ultimate source of *miracle*, *mirror* and *admiration*. All mirages cannot be explained in the same manner and some of them are not entirely understood. Different effects are produced by the atmospheric conditions peculiar to different stretches of land and sea. The simplest and most common mirage is the illusion of a sheet of water where no water exists. Travelers in the desert often see imaginary pools and lakes ahead that disappear or recede as the observer proceeds in their direction. In 1940 it was reported that two duck hunters of Pueblo, Colorado, spent several early morning hours beside a "lake" before they discovered that it was only a mirage. Although the hunters were fooled by the mirage, the ducks were not! Desert sand radiates heat that causes a layer of air close to the ground to expand and become rarer than

the layers above. The usual condition is thus reversed and the denser stratum lies above the rarer stratum. A distant object viewed across such a blanket of heated air will be seen by means of two different sets of light rays. The more horizontal rays pass close to the ground and assume a path convex in respect to the horizon, while the more oblique rays pass higher up and assume a path concave in respect to the horizon. To an observer above the rarefied layer the object appears double, an inverted image being seen as if mirrored by the sand. Actually it is the layer of heated and rarefied atmosphere that serves as a reflector. Objects are reflected from the sky, being sometimes recognizable and sometimes grotesquely distorted beyond recognition. Mirages of cities and mountains are occasionally seen at great distances from the real objects. Beautiful lakes, surrounded by trees and cliffs, appear in barren deserts. Mountains hundreds of miles away have been seen reflected in the sky at night by lightning. Not infrequently mirages are distinguishable from the actual objects only by their quivering and changing position, and even experienced travelers in the desert are occasionally misled by these optical illusions. It is possible but difficult to photograph a clearly visible mirage. A camera is essentially like the eye and it sees what the eye sees, although it is not so sensitive to color and does not register all that the eye does. Miniature mirages occur all around us. They can be seen over hot stoves and the tops of sun-heated cliffs. Motorists driving over paved roads on hot days appear to see pools or sheets of water, with other objects reflected in them, in the road ahead, but the pools are only imaginary and vanish when the car approaches the places where they seem to be. The pavement, like the desert sand, heats the layer of air next to it and converts it into a mirror. It is an interesting fact that mirages, once common on the prairies and plains west of the Mississippi, are now seldom seen except in certain sections, cultivation of the soil having produced conditions unfavorable to these optical illusions. At sea the denser and rarefied layers of atmosphere are often reversed and a different type of mirage results. The denser layer is near the water and the reflection occurs in the rarer atmosphere above the observer. Images of ships and icebergs actually below the horizon sometimes appear inverted and suspended in the air, frequently being multiplied and magnified. When bodies of air of different densities are in close proximity a weird effect may be produced. A single vessel below the horizon may appear as a long row of exceedingly tall vessels. Again, a ship viewed over a misty or foggy body of water may appear to be elevated and elongated, a phenomenon known as looming or towering. Mirages

not only produce grotesque, weird and fantastic effects but play queer pranks. During the First World War these optical illusions interfered with the fighting between the British and Turks in Mesopotamia. Targets were distorted and armies were concealed, magnified or placed in imaginary situations by mirages. In 1906, Admiral Robert E. Peary, standing on the northernmost point of Axel Heiberg, thought he saw a vast land in the Arctic sea that was later indicated on maps as Crockerland. The MacMillan expedition eight years later sought in vain for this territory. It was in fact an Arctic mirage and no such land ever existed. Occasionally the successive layers of atmosphere bear such a relation to one another that the whole acts as a gigantic lens and brings distant objects in large proportions to the observer. A classic case of this type of mirage is the Fata Morgana. In the latter part of the eighteenth century a Dominican friar named Antonio Minasi wrote a description of a fantastic mirage that he saw across the Strait of Messina in southern Italy. The friar saw a land of enchantment pass rapidly before him, a magnificent city with castles, palaces, spired cathedrals, towers with battlements, mighty obelisks, spacious gardens and expansive parks with perfectly spaced trees. He called it *Fata Morgana*, Italian for "Morgan the Fay" or "Fairy Morgan," the name of King Arthur's sister in the Arthurian legends. Since the Normans of England believed that Morgan the Fay, who was a necromancer, lived in Calabria near the Strait of Messina, Friar Antonio named after her the magic city that he had seen.

Who was known as "the Divine Sarah"?

Sarah Bernhardt (the stage name of Rosine Bernard), famous French actress, is known as "the Divine Sarah." This title is believed to have been bestowed upon her by Oscar Wilde after she played the part of the queen in Victor Hugo's *Ruy Blas* in London in 1879. Wilde later wrote to François Elie Jules Lemaître, French author and critic: "Were I a king I would give half of my kingdom, the half of my scepter, the half of my crown, to know that *divine Sarah*, and I would make her known all over the world." The phrase may have been suggested by a more euphonious one in Shakespeare. In *Othello*, Act II, scene 1, the Moor speaks of his wife as "the divine Desdemona." Sarah Bernhardt's name did become "known all over the world." She became the most famous actress of her day and earned about nine million dollars during her stage career. She is supposed to have been born in Paris about 1844. Although of Jewish or part Jewish descent, she was baptized a Christian when a child and was educated in a convent. There is a

curious local tradition that she was born and spent her childhood in the village of Rochester, Cedar County, Iowa. At one period of her life she attracted considerable attention and received honorable mention for her work as an amateur sculptor. On the stage she played men's as well as women's parts. She even played the part of Hamlet in Shakespeare's tragedy of that name. She visited America many times. While in the United States in 1913 she had an accident that developed blood poisoning and necessitated the amputation of a leg in 1915. She learned to walk on an artificial leg and continued her stage career until a short time before her death in 1923. Her last appearance on the American stage was in Cleveland, Ohio, in 1918, when she played in a benefit performance for the Fourth Liberty Loan. Sarah Bernhardt was married only once. Through her marriage to an actor named Jacques Damala she became a Greek citizen. Her only child was a natural son of Prince Henry de Ligne. His name was Maurice Bernhardt and for a time he managed a Paris theater bearing his mother's name.

What is meant by the *leaves of Vallombrosa*?

In *Crusader in Crinoline* (1941) Forrest Wilson says that Henry Ward Beecher told his sister Harriet Beecher Stowe that if she would finish *Uncle Tom's Cabin* he would "scatter it thick as the leaves of Vallombrosa." When the story was published in book form in 1852 it sold 2,500,000 copies the first year. "Thick as the leaves of Vallombrosa" was suggested by a famous passage in John Milton's *Paradise Lost*:

Thick as autumnal leaves that strew the brooks
In Vallombrosa, where th' Etruscan shades
High over-arch'd imbow'r.

Vallombrosa (literally "Shady Valley") in Milton's time was a famous Benedictine monastery in the Apennine forests about sixteen miles from Florence in Tuscany. Scholars point out that most of the trees there are evergreens and do not strew the brooks with autumnal leaves. The eleventh-century monastery at Vallombrosa, suppressed in 1816, now houses a school of forestry, and the village is a noted summer resort.

How did *banjo* originate?

Banjo, the name of the small stringed musical instrument with a body like a tambourine and a neck like a guitar, has given etymologists much trouble. The banjo was probably patterned after a crude native

African instrument. A primitive type of banjo, made with gourds and grass strings, is still used by the natives on the Guinea coast. Its Senegambian name is *bania*. In his *Notes on Virginia*, written in 1787, Thomas Jefferson referred to it as an instrument "proper to the Blacks, which they brought hither from Africa." The spelling *banjo* is not recorded earlier than about 1800. Before that the instrument was called variously *banjore*, *banjer* and *banshaw*. These terms are believed to be Negro corruptions of *bandore*, which is the name of a guitar-lutelike instrument and which is indirectly derived from Greek *pandoura* and Latin *pandura*, the names of ancient stringed instruments fabled to have been invented by Pan. *Banjore* and *banjer* were probably softened by the Negroes into *banjo*. The term, however, may have been influenced by the native African name. It may be the result of a fusion of *banjore* and *bania*. Words often undergo queer transformations in spelling, pronunciation and meaning when they pass from one language to another. The story that the banjo was invented by and named after a versatile Irish-American, Joseph Sweeney, who played so many different instruments that he was called Band Joe or Bandjo, is facetious and not to be taken seriously. Whether of African or American origin, the banjo became a favorite instrument for plantation melodies and as we know it today it was evolved and developed among the Negroes of the South.

How did *stuffed shirt* originate?

Stuffed shirt, in the slang sense of a pompous person who doesn't amount to much, originated in 1899 when the American actress Fay Templeton threw the phrase as an epithet at a "tremendous nobody" named John Gates. In his diary John Quincy Adams (1767-1848) used "stuffed cravat" in a similar sense.

Who said the Battle of Waterloo was won at Eton?

"The battle of Waterloo was won on the playing fields of Eton" is popularly ascribed to the Duke of Wellington, who was a graduate of Eton College and commander in chief of the British and allied armies at Waterloo. The famous quotation is really only a polished-up version of what the Iron Duke said. Ten years after the Battle of Waterloo, while watching a cricket match at Eton, the Duke of Wellington was overheard to say: "The battle of Waterloo was won here." Of course, the man who defeated Napoleon at Waterloo did not mean literally that Eton men had won the battle. He meant merely that the games and sports at British colleges developed those qualities in men that

made good soldiers. Most of our popular games and sports are merely mimic warfare. Incidentally, the Duke of Wellington and Napoleon never met personally, although they were once within a quarter of a mile of each other during the Battle of Waterloo. Eton College, one of the oldest and most famous schools in England, was founded about 1440 during the reign of Henry VI.

How did *subpoena* originate?

A subpoena is a writ commanding a person to appear before a court, grand jury or other judicial body to testify as a witness. The word is from Latin *sub*, "under," and *poena*, "punishment" or "penalty." The subpoena received its name from the fact that under English common law the person summoned in this manner was bound to appear "*sub poena centum librorum*," that is, "under a penalty of one hundred pounds."

How long do crocodiles and alligators live?

The longevity of crocodiles and alligators can be only conjectured. Evidence is not available to prove or disprove the common notion that they attain greater ages than many other creatures. It has been generally assumed that crocodiles live to be very old because they grow slowly, but it is now known that crocodilians grow more rapidly than was formerly supposed. Some of the sacred crocodiles of India are believed to be more than a century old. Alligators in captivity have been known to live forty or fifty years without showing any signs of senescence.

What was Darwin's religion?

Charles Robert Darwin (1809-1882), the great naturalist, in his mature years declared that he had no fixed theological beliefs and that his mind was subject to fluctuation on the subject of religion. In 1825 his father (a son of the great Erasmus Darwin) sent him to Edinburgh to prepare for the medical profession, for which he was obviously unfitted. Three years later he was sent to Christ's College, Cambridge, with a view to becoming a minister of the gospel in the Anglican Church. His proficiency in every branch of natural science led him to abandon his preparation for the ministry. Darwin was never an atheist in the general acceptance of that term, and the story that he repudiated his entire philosophy, including the theory of evolution through natural selection, on his deathbed was a pure invention. The following passage from his autobiography expresses his religious views in a general way: "In my most extreme fluctuations I have never

been an atheist in the sense of denying the existence of God. But I may say that the impossibility of believing that this grand and wondrous universe with our conscious selves arose through chance, seems to be the chief reason for the existence of God." In his writings Darwin continually employs expressions indicating a general belief in a supreme being. "I trust in Providence," "God of Nature," "I thank God" and "I hope to heaven" are characteristic phrases taken at random from his writings. "The ennobling belief in God," he wrote in his *Descent of Man*, "is not universal with man; and the belief in spiritual agencies naturally follows from other mental powers." In his *Naturalist's Voyage Round the World* he said: "Both are temples filled with the varied productions of the God of Nature—No one can stand in these solitudes unmoved, and not feel that there is more in man than the mere breath of his body." Darwin did not fail in that same work to pay high tribute to the work of the missionaries on the islands of the Pacific, and he contributed £50 toward the support of the mission established in Tierra del Fuego by Allen Gardiner. The following record in the last-mentioned book is interesting in this connection: "They asked me, 'Why do you not become a Christian—for our religion is certain?' I assured them I was a sort of Christian." Two other passages from Darwin's letters give us a hint as to his mental processes on the subject of religion. "As for a future," he wrote on one occasion, "every man must judge for himself between conflicting vague probabilities." Again: "Believing as I do that man in the distant future will be a far more perfect creature than he now is, it is an intolerable thought that he and all other sentient beings are doomed to complete annihilation after such long-continued slow progress. To those who fully admit the immortality of the human soul, the destruction of our world will not appear so dreadful." It is said that Darwin ordered his coffin made in his lifetime so as to give employment during a slack season to the carpenter who made boxes and cases for his natural history collection.

What is the largest reptile?

The crocodilians are the largest of all living reptiles. This order includes the crocodiles, alligators and gavials, which all attain about the same maximum size. Specimens thirty-three feet long, several feet in diameter and more than two tons in weight have been reported. But there is a tendency to exaggerate the maximum size attained by these giant, lizardlike reptiles. The late Dr. William T. Hornaday, noted

American naturalist, was of the opinion that no crocodile, alligator or gavia of the present time exceeds twenty feet in length and that specimens even of that length are comparatively rare. Any crocodilian longer than ten or twelve feet may be regarded as of exceptional size.

What causes the northern lights?

The northern lights have never been explained satisfactorily. Scientists have been studying them for generations but have not yet been able to determine the exact cause of these fireworks of nature, and theories explaining them are subject to continual revision. The ancients watched the northern lights with awe and ascribed to them a supernatural origin. In Roman mythology Aurora was the goddess of the dawn and Boreas was the personification of the north wind. *Aurora* signifies "dawn" and *borealis* "north," hence the northern lights are called aurora borealis. When it was learned that a similar luminous phenomenon occurs in the south polar region the southern lights were called aurora australis, "south dawn." *Aurora polaris* is the generic name for both the northern and the southern lights. These spectacular phenomena, among the most beautiful and marvelous in nature, are believed to be produced somehow by vast electrical discharges in the earth's upper atmosphere originating with or induced by the sun. The general theory is that something from the sun breaks up the molecules of the atmospheric gas, electrifies them, causes them to be drawn toward the poles of the earth and renders them susceptible to the earth's magnetic field. In other words, electrons from the sun ionize the rarefied gases at low pressure in the upper atmosphere and what takes place on a grand scale is similar to what takes place in miniature in a neon-sign light. Miniature synthetic auroras can be produced in laboratories. Molecules of air in a glass tube are bombarded with a current of electricity and made to glow in waves of color similar to the northern and southern lights. The northern lights range from a bright glow to active streamers. Sometimes they cover the whole sky with a quivering mass of feathery flames. The long, slender beams of light of various colors form an arc in the heavens. Often there are coronas, rays, arcs, crisscrosses and other discharges of red, green, yellow and blue lights that brighten the skies. There seems to be some relationship between the aurora polaris and sunspots, but just what it is has not been determined definitely. Very bright displays of the northern lights are frequently accompanied by magnetic disturbances that disrupt telegraph, cable and radio communications.

Aurora polaris is rare within forty-five degrees of the equator and is more frequent farther north, although it is not common within sixty degrees of the poles. The northern lights are most frequent in October and April and most rare in December and June. They have been observed in the United States as far south as Georgia and New Mexico. It is not uncommon for displays of the northern lights to be mistaken for the glow of a distant fire. The height of the northern lights is said to range from ten miles to more than a hundred above the earth. Because of their undulatory motion they are sometimes called the "Merry Dancers" in England. The French call them *chèvres dansantes*, "dancing goats." "Lord Derwentwater's lights" is a local name of the northern lights in the north of England, because there was an unusually vivid and weird display of them on the night in 1716 that James, Earl of Derwentwater, was beheaded for rebelling against his sovereign.

What is the Boiling Lake?

Boiling Lake is a remarkable natural curiosity on Dominica, largest of the British West Indian islands in the group known as the Leeward Islands. The famous Boiling Lake is on a mountainside some 2,300 feet above sea level. It has sheer banks and the water is 300 feet deep near the margin. Its depth at the center has not yet been determined. The seething waters of the lake are sometimes forced two or three feet above the normal level by the pressure of escaping gases, and the fumes arising from the lake are somewhat poisonous. Dominica was so named by Columbus in 1493 because he discovered it on the Lord's Day (*Dies Dominica*).

Is *got* or *gotten* the past participle of *get*?

Got and *gotten* are merely different forms of the past participle of the verb *to get* and are often used interchangeably. In a general way, however, *got* is preferred in British and *gotten* in American usage. *Gotten* dates back at least to the fifteenth century and was an accepted form in England for two centuries. In the course of time it was superseded by *got* and became virtually obsolete in England. *Gotten* was used more often than *got* in the King James Version of the Bible (1611), which followed the older style; but *got* was used more often than *gotten* by Shakespeare, who followed the style of his time. Meanwhile the language had been introduced into America and the older form prevailed on this side of the Atlantic. At one time it appeared as if *got* would supersede *gotten* in America also. The edition of Noah Webster's dictionary published in 1864, de-

clared *gotten* to be "obsolescent." But use of this form was revived and it ultimately prevailed in the United States. The English retain the older form in *ill-gotten*, although they have abandoned it in *forgot* and most other combinations including the past participle of *get*. *Forgotten* and *forgot* went through virtually the same stages as *gotten* and *got* separately. Except in one instance *forgotten* is used to the exclusion of *forgot* in the King James Version, while in Shakespeare *forgot* occurs much more frequently than *forgotten*.

Are rats native to America?

Several species of rats are native to America, such as the cotton, the Florida and the Rocky Mountain rat, but the common black, brown and gray house rats are of Old World origin. Both the black and the brown rat are believed to be natives of China. Westerners generally are horrified by the thought of eating rats because of their uncleanness and repulsive appearance. But these animals are a regular article of food in many parts of the Orient. They may be bought any time in the markets of some Chinese cities—either dried like herrings or alive in cages. Native American rats differ considerably from house rats. The wood rat, for instance, is cleanly in habits, eats food of an unobjectionable nature and has flesh that is said to be palatable and wholesome. Rats are not mentioned in the Bible and they are not referred to in Greek and Roman literature, although a medieval legend says that Abdera, an ancient maritime town in Thrace, became so overrun with rats that all the inhabitants abandoned the place and removed to Macedonia. The world-wide distribution of house rats resulted from world-wide commerce. They probably were not introduced intentionally anywhere, but they have found their way by means of ships and vehicles to all parts of the world. Just when the black (Indian) rat was introduced into Europe is not known. Late Latin *ratus* and its cognates in other European languages may have originally been applied to another rodent. Some authorities suppose the Crusaders brought the black rat from the Near East. During the latter part of the Middle Ages this species was the common house rat on the continent. The brown (Norway) rat did not appear in Europe until about 1727 when great numbers of them swam across the Volga and established themselves in Astrakhan, whence they spread westward to Europe and finally to America. William T. Blanford (1832-1905), English scientist, wrote in *Mammals of India* that Chinese Mongolia was probably the original habitat of this species. It was not native to India, and in Blanford's day it was unknown in Persia and

Afghanistan, although he predicted that the brown rat would be introduced into the two latter countries as soon as wheeled vehicles supplanted pack animals. The black rat was introduced into the New World from Europe as early as 1544. There may have been members of this species on the *Mayflower*. The black rat is less hardy and generally it has become comparatively rare where the brown rat has become abundant. The gray, Alexandrine, roof or white-bellied rat is a native of Egypt and North Africa and apparently found its way to America at an early date by way of Italy and Spain. Aldabra Island, 200 miles northwest of Madagascar, swarms with black rats that feed on the young of the gigantic land tortoises as soon as they are hatched. In the Laccadive Islands in the Indian Ocean black rats modified their habits and became arboreal, living in coconut trees without ever descending to the ground, and feeding on the unripe nuts. A species of rat in New Guinea measures three feet from the tip of the nose to the tip of the tail. House rats are among the most destructive pests in the world. They are hard to exterminate because they are prolific, omnivorous, agile and resourceful. A rat can jump vertically to a height of two feet or more. It can drag objects from place to place by means of its tail. Rats are common disease-carriers and probably have been responsible for more human deaths than all the wars of history. Under favorable conditions the progeny of a pair of rats could number 350 million in three years. Rats, like guinea pigs, are often used in scientific experiments because they multiply rapidly and eat about the same foods as human beings.

Does it take more posts to fence over a hill?

It depends on how the fence is built. Suppose a fence is built along one side of a piece of land one mile square. When rolling or mountainous land is surveyed for division purposes it is treated as a plane surface and the surveys are made exactly as if the hills or mountains did not exist. Although there are more actual square rods of surface area in a section of hilly or mountainous land than there are in a section of level land, both contain the same acreage from the surveyor's standpoint. Therefore, in the case supposed, the fence is one mile long regardless of hills and valleys. No more posts or pickets are required to build the fence if the line traverses hills than if it traverses only level land, provided the posts are placed parallel to one another and the same horizontal distance apart. The ground distance between two posts is greater than the horizontal distance and forms the hypotenuse of a right-angled triangle one side of which is equal to the

ground distance between the posts on level land. Accordingly, if only ground distance is considered, fewer posts are required to build a mile of fence over a hill than to build a mile of a similar fence on level land, because on the hill the posts are not placed at right angles to the ground. When horizontal distance across the field is considered the number of posts is the same whether the ground is level or hilly. However, when a fence is so constructed it is often necessary to use longer posts on the hillsides, especially if the decline is decided. Sometimes in building fences over rolling ground the posts are set more or less perpendicular to the surface, in which case the posts are not parallel but are slightly closer together at the bottom than at the top. More posts or pickets are required to build such a fence over a hill than to build it on level land. With the wire it is different. In both cases more wire is required to go over a hill because it follows the actual curvature of the ground and a curved line connecting two points is longer than a straight line between the same points.

Which is heavier, wet or dry sand?

Dry sand is heavier, measure for measure, than wet sand—up to a certain percentage of moisture. A cubic foot of average wet river sand weighs from twelve to fifteen pounds less than a cubic foot of the same sand when dry. One who buys a cubic yard of damp sand by measure will get less than one who buys an equal volume of dry sand. When a specified standard of concrete is required contractors fill a barrow level with dry sand, but they are permitted to heap the barrow with wet sand. Sand dampened moderately increases in volume out of all proportion to the amount of water added. Consequently any given measure of moist sand weighs less than the same measure of dry sand. This bulking or “piling” of sand is due to a film of water that forms around the individual grains and prevents them from flowing together. As a general rule fine sand bulks more with the addition of water than coarse sand does. From a dry condition to about 5 percent of moisture sand bulks greatly. This bulking, however, is governed by the percentage of moisture and does not continue indefinitely with the addition of water. According to the United States Bureau of Roads, if sand is thoroughly saturated so that all the voids are filled with water, it again approximates its original weight, measure for measure. A cubic foot of sand having a moisture content of about 14 percent weighs about the same as an equal measure of dry sand. In other words, when sufficient water is incorporated the saturated sand is equivalent in weight to the same bulk of dry sand. To illustrate: Suppose a cubic

yard measure is filled with dry sand and then water is poured slowly into it until the sand reaches the saturation point; or, suppose the measure is first filled about one-third full of water and the sand is then added slowly until the measure is full. The measure will weigh about the same as if it were full of dry sand. Engineers call this process "inundation."

Do bats migrate?

Some species of tree-dwelling bats in the North Temperate Zone are known to migrate, as birds do, going south in the winter when insects are unavailable and returning north in the spring. Other species hibernate, that is, they hang head downward (sometimes in great clusters) in a semitorpid state in caves, crevices, hollow trees, buildings and other retreats during the cold season when they cannot obtain food. Occasionally hibernating bats become active and emerge from their retreats during warm spells. Among the bats of the United States and Canada that are believed to be migratory are the common little brown bat, the red bat, the hoary bat and the spotted or jackass bat. Apparently the red bat migrates from the northern part of its range and then hibernates in the southern part. It is believed that in migrating the male and female bats fly in separate flocks. As a rule bats become fat as the cold season approaches. Bats in the tropics remain active the year around.

How did *under the rose* come to mean "in secret"?

Under the rose is a literal translation of Latin *sub rosa*. Its use in the sense of privately, confidentially or secretly is of obscure origin, but it is believed to be derived indirectly from Greek mythology. In ancient Egypt the sun-god Horus was often represented in statues and pictures as a naked baby sucking his thumb, symbolizing birth or childhood. The Greeks and Romans borrowed this Egyptian god and identified him with their Harpocrates; but they mistook the characteristic thumb-sucking attitude for a finger on the lips and supposed it to symbolize silence. Thus Horus, the god of childhood, was transformed into Harpocrates, the god of silence and reticence, and as such he was a favorite deity among the later schools of mystic philosophy. Cupid, it is said, gave Harpocrates an open rose to bribe him not to disclose the amorous pranks of Venus and thereafter this flower was the emblem of the god of silence and the symbol of secrecy. A rose was sometimes worn in the headgear of an Athenian as a sign of membership in a secret society. One writer says the exact form of the phrase

sub rosa, "under the rose," was due to the fact that a Greek general once plotted the betrayal of his people to the Persians in a chamber that had this symbol of secrecy sculptured on the ceiling. That may not be authentic, but during the Middle Ages this sign in a council chamber indicated that the sessions were "executive" and the proceedings were not to be disclosed. Sometimes the emblem was placed on the ceiling of a banquet room, or a vase of actual roses was placed in the center of the table, to remind the guests that what was said and done during the entertainment was "off the record" and would not be divulged. The emblem was placed over confessionals as early as 1526 to assure the person confessing that everything was in the strictest confidence. There is reason to suppose, says the Oxford dictionary, that *sub rosa* and *under the rose* reached England by way of Germany. No occurrence of the phrase has been found in English earlier than 1546. After the revolution of 1688 the Jacobites adopted the rose as their emblem because their meetings were in secret and their aid to the Stuart cause was *sub rosa*.

Why is the horseshoe associated with good luck?

The superstition that finding a horseshoe and nailing it over the door will bring good luck is widespread and dates back several centuries. It appears to be merely a modification of the earlier belief in the horseshoe as a protective charm. In the second century A.D., when iron horseshoes were still uncommon, Pliny the Elder recommended a horseshoe as a protective charm and healing agent. During the Middle Ages the horseshoe was used as a charm against witchcraft. John Aubrey (1626-1697), English antiquary, wrote that many houses in London in his day had horseshoes over the doors. It had long been a common belief that a horseshoe nailed to the door of a house would protect the inmates from witches and that no evil spirit would cross the threshold of a home so protected. Lord Nelson had a horseshoe nailed to the mast of his flagship. In a mild form the superstition is still quite prevalent and horseshoes are often attached to buildings, vehicles and ships. Soon after he became president in 1945 Harry S. Truman had a horseshoe put up for luck over the main entrance to his White House office. Just how the iron horseshoe acquired its alleged magical properties is not known. The horseshoe superstition may be a fusion of several ancient beliefs. One theory is that it was the iron of which the horseshoe is made rather than the horseshoe as such that was originally regarded as a protective charm and as a symbol of good fortune. In ancient times iron was a sacred and luck-bringing metal.

Finding any iron object was propitious. The Romans drove iron nails into the walls of their houses as an antidote to the plague. An old English rhyme runs:

See a pin and pick it up;
All the day you'll have good luck.

Another theory is that the horseshoe acquired its magical properties because of its similarity in shape to the lunar crescent, which in ancient times was a symbol of good luck. Some authorities suppose that the halo or nimbus around the heads of saints and angels in conventional pictures was suggested by the crescent of the moon. Crescent-shaped devices were used to ward off the evil eye. Still another theory is that the superstition is somehow related to the mystic seven, the number of nails in a horseshoe. Some people say that only a cast-off horseshoe that has been found on the road is effective as a good-luck charm and that the potency of the charm is increased in proportion to the number of nails in the shoe when found. It is probable that placing horseshoes on stable doors was originally intended to prevent witches from entering and riding the horses at night. Believers in the horseshoe superstition disagree on the manner of hanging or nailing the luck piece. Some hang the shoe toe down "so the luck won't run out." Others hang it with the heels pointing downward in imitation of the sacred halo. Still others insist both of these methods are wrong and that the shoe brings the best luck when hung with the sides horizontal. The horseshoe that President Truman had hung above the door to his executive office in the White House was placed with the prongs up and the loop down.

Which is correct, *Korea* or *Chosen*?

Korea was the name given to the country in northeastern Asia by foreigners, particularly Europeans. The Koreans and other Orientals have always preferred to call the country *Chosyon* (generally *Chosen* in English), because that is the ancient native name. *Chosyon* is derived from Chinese *Ch'ao Hsien*, "Land of the Morning Calm." In 1910 the Japanese annexed Korea, which they called "the dagger pointing at the heart of Nippon," and dethroned the emperor, whom they reduced to the rank of "Prince Yi." During their occupation of the country the Japanese called it *Chosyon*, which they formally changed in 1938 to the Japanese form *Tyosen*. The Korean name of the capital is *Seoul*, but during the Japanese occupation it was known by the Japanese name *Keijo*. In 1882 the United States made a treaty

with Korea and introduced "the hermit kingdom" to the Western world. The Koreans differ racially from both Chinese and Japanese. Some authorities suppose that the Korean race was formed thousands of years ago by the mixture of Chinese, Mongols from the north and Caucasians from India. They speak an agglutinative tongue that appears to stand as an isolated unit outside any of the grand families of languages.

Did Nero fiddle while Rome burned?

Since the violin and other musical instruments played with a bow were not invented 'until the Middle Ages, the instrument on which Nero played while Rome burned, if he played on that occasion, must have been another kind. Nero prided himself on his musical genius and played and sang at public concerts in many parts of the empire. When horsemen approached to take him to execution he is reputed to have commanded an attendant to stab him to death and to have exclaimed: "What an artist dies in me!" His favorite instrument is variously described as a harp, lute and lyre. The Romans called a small lute or lyre *fidicula* (hence the later confusion with English "fiddle"), and *fidicinal* is still used as an adjective meaning "of or pertaining to stringed instruments." In Shakespeare's *I Henry VI* Talbot, after Salisbury is mortally wounded by a shot from the walls of Orleans, says:

Plantagenet, I will; and like thee, Nero,
Play on the lute, beholding the town burn.

In July, 64 A.D., two-thirds of Rome was destroyed by a fire that burned nine days. When the fire started Nero was at Antium, thirty-five miles away, but he returned to Rome and personally directed operations to extinguish it and to relieve the homeless. He established his headquarters in the trans-Tiber section, which was untouched by the fire. It seems that one night, while sitting on the roof of his pavilion watching the flames devour Rome, he took up his *fidicula* and sang a dirge or lament. Some authorities say he sang an aria from his own opera on the burning of Troy. The people were in a state of terror and in a mood to believe any sort of rumor. It was whispered the the emperor himself had fired the city to see how Troy looked in flames. The story was readily believed by many because Nero had proposed a gigantic project of rebuilding and improving the city and had met with bitter opposition from property owners. The fact that he took a personal interest in designing the

new Rome according to his own notions of safety, comfort and sanitation lent color to this notion. In the eyes of the excited populace the fact that Nero ordered undamaged buildings destroyed to stop the progress of the fire was further proof that he wanted the city burned. It was easy to believe anything said about a man of such depraved sensuality. Suetonius, Dion Cassius and most of the historians after Tacitus held Nero responsible for the fire; but Tacitus, although he mentions the rumors, says Nero's guilt is not certain and the origin of the fire is unknown. The emperor, perhaps to divert suspicion from himself, charged the new sect of Christians with starting the fire and began to persecute them mercilessly. His charge was readily accepted because the Christians had refused to help put out the fire on the ground that it was one of the inevitable signs of woe preceding the second coming of Christ.

Who wrote the Negro spirituals?

The spirituals are sacred folk songs created or modified by the Negroes in America. Although many of them have been arranged and interpreted by known composers, their words and music are traditional and their individual authorship is not known. Many of the spirituals apparently developed in Negro communities and are the expression of group rather than individual experiences. The Negro has always had a tendency to put his experience into song and it is probable that Negro bards began to create or to adapt the spirituals soon after their subjection to slavery and their conversion to Christianity. The spirituals seem to have grown up almost spontaneously among the Negroes as they gathered in the fields and cabins and in the churches and meetinghouses on the plantations. They combine Christian sentiments with rhythm and music possessing African characteristics. Some of the spirituals in the West Indies and South America contain traces of direct influence from Africa, but those on the North American mainland show few, if any, traces of a direct African heritage. They are characteristic of the Negroes but original with them only in mood and arrangement. Often they are merely old religious or secular folk songs of the white man reworked to suit the mood and fancy of the Negro. Some appear to be based on long-forgotten English, Irish and Scottish songs that the Negroes picked up and modified generations ago. Many are based on fragments of Biblical stories told dramatically and vividly. When the Negroes began to create or to adapt these beautiful folk songs and hymns is not known. Some pieces undoubtedly date back nearly two centuries. It is said

that the favorite "plantation songs" among the Negroes of slavery days are best preserved among the Cherokee Indians of North Carolina. The Negro spirituals are remarkable in that, though born in slavery, they contain no note of bitterness. No effort was made to record the spirituals until after the Civil War, and they were not fully appreciated by musical critics until after they were introduced to the public in 1871 by the Fisk Jubilee Singers. A peculiar type of music developed by the Negro minstrels in Trinidad is called Calypso. Calypso songs, accompanied by the guitar, are sung by the Negroes in a French patois liberally interspersed with Spanish and Hindu idioms and words or in English with an odd British accent. Professor N. G. Balanta, a native of West Africa, spent many years in an effort to trace the source and history of Negro spirituals. "Christianity," he wrote in 1930, "was the force that breathed life in the innate musical talent of the African in his new environment. Far from his native land, despised by those among whom he lived, knowing the hard taskmaster, feeling the lash, the Negro seized Christianity, the religious compensations in the life to come for the ills suffered in the present existence. The result was a body of songs voicing all the cardinal virtues of Christianity—patience, forbearance, love, faith and hope—through a modified form of primitive African music."

Why do people say, "God bless you," when one sneezes?

Sneezing has been regarded as a sign of good luck or omen of evil since time out of mind, and the custom of bowing, saluting or saying something equivalent to "God bless you" when another sneezes was observed by the ancient Greeks and Romans. It has been suggested that the custom arose from the fancied resemblance of the sound of an unrestrained sneeze to "God bless you," but the theory is untenable, because the ancients upon such occasions used exclamatory phrases similar in meaning but entirely different in sound. Carolus Sigonius, in his history of Italy, says a sneeze was invariably a crisis symptom when a pestilence swept the country in the time of Gregory the Great, and some writers inferred from this that the pope enjoined the people to pronounce a blessing when any person sneezed. But Aristotle mentions the custom, and ancient historians tell us that sneezing was a mortal sign during the great plague that depopulated Athens. That sneezing is a supernatural sign has been believed at one time or another by nearly all peoples. Many of the ancients regarded the breath and the soul as identical and it may be that they supposed a violent sneeze to indicate that the soul was about to depart

from the body. Homer's *Odyssey* contains the following: "As she spoke Telemachus sneezed so loudly that the whole house resounded with it. Penelope laughed when she heard this, and said to Eumaeus, 'Go and call the stranger; did you not hear how my son sneezed just as I was speaking? This can only mean that all the suitors are going to be killed, and that not one of them shall escape.'" Both the Greeks and Romans considered a sneezing on the right side a lucky sign and a sneezing on the left an evil omen. In his life of Diogenes, Diogenes Laertius says: "When a man that was excessively superstitious said unto him, 'I will cleave thy head in two at a blow,' he said, 'But I will sneeze on the left and make thee tremble.'" Plutarch tells us that when Themistocles sacrificed on board his galley before engaging Xerxes in battle a sneezing was heard from the right and the soothsayer from this presaged the victory of the Greeks over the Persians. The superstitions connected with sneezing were elaborate in those days. A Greek would go back to bed if he heard somebody sneeze while he was dressing in the morning, and there is record of an Athenian navigator who abandoned a voyage because a boatman sneezed as they were weighing anchor. Aristotle refers to a belief that sneezing between noon and midnight was a lucky sign, while it was unlucky to sneeze between night and noon. The Roman emperor Tiberius, it is recorded, was very punctual in saying *Absit omen* when another sneezed and he insisted that others perform the same rite for him. Petronius, Apuleius and other early writers allude to this custom. "Sneezing will stop a hiccup," wrote Hippocrates 400 years B.C. According to rabbinical legend, sneezing was a sign of death from the time of Adam until the curse was taken from it as the result of a special supplication of Jacob and on condition that in all nations every sneeze should be hallowed by the words "God bless you." When the Spaniards first visited the aborigines of Florida a chief sneezed and every native with him lifted up his hands and implored the sun to avert the calamity that the sign portended. An old English translation of the *Golden Legend*, the lives of saints compiled in the thirteenth century by Jacobus de Voragine, contains the following quaint passage about a pestilence in Rome: "In this manner some sнесynge they deyed; soo when ony person was hered sнесinge, among they yt were by sayd to him, God helpe you, or Cryst helpe you; and yet endureth the custome. And also whan he sнесyth or gapeth, he maketh before his face the signe of the cross, and blyseth hym, and yet endureth this custome." We still say of something that should be taken seriously that it is "not to be sneezed at." *Gesundheit* (ge-ZOONT-hite)

is a German word meaning (to your) health, and is often used as an ejaculation when one has just sneezed. When a Hindu sneezes he says, "Live," and expects the reply, "With you" or "May you live," a practice antedating Buddha, who lived in the sixth century B.C. The following passage occurs in the sacred writings of the Buddhists:

One day Buddha, while seated in the midst of a large congregation of disciples to whom he was preaching the law, chanced to sneeze. Thereupon the priests, exclaiming, "May the blessed Lord live; may the Welcome One live," made a loud noise and seriously interrupted the discourse. Accordingly, Buddha addressed them as follows: "Tell me, priests, when a person sneezes, if the bystanders say, 'May you live,' will he live the longer, or die the sooner for it?" "Certainly not, Lord." "Then, priests, if anyone sneezes you are not to say to him, 'May you live'; and if any of you shall say it, let him be guilty of a transgression." From that time forth, when the priests sneezed, and the bystanders exclaimed, "May you live, sirs," the priests, fearful of transgression, held their peace. People took offense at this. "What," said they, "do these priestly sons of Sakya mean by not uttering a word when we say, 'May you live, sirs'?" The matter came to Buddha's ears. "Priests," he said, "the laity are the cornerstone of the church; when laymen say, 'May you live, sirs,' I give my sanction to your replying, 'Long life to you.'"

Sneeze is of echoic origin and in its original form was an attempt to describe the sound made by sneezing, which is a sudden, involuntary expulsion of breath through the nose and mouth, generally caused by the inhalation of dust or other particles that irritate the nasal branches of certain cranial nerves. The irritation that causes the reflex action known as sneezing may also be produced by excessive wax in the ear and there have been cases of persons' having their hearing improved after sneezing. A sneeze may be sufficiently violent to crack the ribs.

What was the weight of medieval armor?

The weight of the armor worn in the Middle Ages ranged from 25 to more than 100 pounds. In the Metropolitan Museum of Art in New York there is a suit of chain mail, including head, body and leg defenses, that weighs only 31 pounds. The same collection contains a specimen of fifteenth-century Gothic armor weighing 49 pounds, while a specimen in Paris weighs 53, and another in Vienna 85. About 1690 Pedro II of Portugal wore a 43-pound suit of mail. The average weight of plate armor was probably about 55 pounds. In the Tower of London there is a complete suit of plate armor which is supposed to have belonged to Henry VIII of England and which weighs 84

pounds. In the same collection there is a 106-pound suit of jousting armor. The weight of the armor in the time of William the Conqueror is indicated by an old picture portraying some of his men carrying armor to their ships. Each body piece is borne by two men on a pole thrust through the arm openings. The heaviest plate armor was worn during the sixteenth and seventeenth centuries, when firearms were already pretty well developed. A suit of such armor in the collection of the Metropolitan Museum of Art is composed of 219 steel plates held together by 1,400 rivets and 85 straps. If an armored knight of that period fell down he could rise only with great difficulty. Horses were also heavily clad in armor. A fall was often fatal to both horse and rider. King James I of England advocated the use of such armor because, he is reputed to have said, it not only protected the wearer but also prevented him from hurting anybody else. It is popularly supposed that the heavy armor of the Middle Ages was worn only by unusually large men, but experts say modern soldiers of average size find it impossible to get into the suits of heavy medieval armor preserved in museums.

Which came first, the hen or the egg?

If the theory of evolution is correct, this age-old question is meaningless and neither the hen nor the egg came first. The original matter into which the breath of life was breathed and which eventually developed into the chicken was at the same time the producer and the product. All higher life on the earth, science presumes, sprang from single-celled animalcules. If we regard the original cell as an egg, then in this sense at least the egg existed before the bird did. In the beginning, it is supposed, all reproduction was by simple cell division; that is, the one-celled organism reproduced by dividing into two or more parts, and each part grew into a likeness of the original unit. New forms of life are supposed to have evolved by mutation. Differentiation in the sexual functions developed so gradually that it cannot be said that there ever was a time when there were birds or fowls and not eggs, or when there were eggs and not birds or fowls, for the reptilian progenitors of birds and fowls undoubtedly laid eggs. Feathers are one of the distinguishing marks of true birds, which are believed to be offshoots from very active lizardlike reptiles, probably related to some of the smaller dinosaurs, which became birds through the evolution of feathers out of scales. Dr. Herbert Friedmann, curator of birds at the United States National Museum in Washington, made the following comment on this subject in a letter

to the author dated September 27, 1930: "The question as to which came first, the hen or the egg, is one that appears, superficially, like a really fair thing to ask, but inasmuch as both are stages in the development of the same organism the question loses meaning. One might as well ask, Which came first, the child or the adult? The two cases are quite comparable. It is only because from a purely human standpoint, based chiefly on experience with both at the dining table, that hens and eggs seem to us to be totally distinct and unrelated things." Of course, if evolution is rejected and special creation is assumed, the question becomes simple. It would be as easy for the Creator to create a full-fledged hen capable of laying eggs as to create an egg capable of hatching and producing a hen. The scientist attempts to trace both hen and egg back to something that was neither hen nor egg; the believer in special creation attempts merely to determine whether the hen or a certain stage of its development was singled out for the honor of special creation.

Why are members of the Society of Friends called Quakers?

Members of the Christian sect commonly known as Quakers at first called themselves Children of Light or Children of Truth, but finally adopted the name "The Religious Society of Friends." Originally *Quaker* was applied to them in derision. Although the name has never been adopted by the Friends themselves, they no longer regard it as a term of contempt or reproach. George Fox, the English founder of the Society of Friends, says in his *Journal* that he and his followers received the popular appellation from the following circumstance: "Justice Bennett, of Derby, was the first to call us Quakers, because I bade him *quake* and tremble at the word of the Lord." It was in 1650, during the Puritan regime, that Fox was charged with blasphemy, haled before Justice Bennett and sentenced to a term in the Derby jail. Bennett may have been the first to apply *Quaker* to Fox and his adherents, but it is probable that Fox was mistaken in supposing the name originated from what he said to the justice. *Quaker* was applied as early as 1647 to a certain sect notorious for its emotional manifestations. This sect was described in a letter of intelligence written in that year to the government: "I heare of a sect of woemen (they are at Southworke) come from beyond Sea, called Quakers, and these swell, shiver, and shake, and when they come to themselves (for in all this fit Mahomett's holy-ghost hath bin conversing with them) they begin to preache what hath bin delivered to them by the Spiritt." It appears from this that Justice Bennett merely used a

word already commonly applied to persons who expressed their religious emotions in trembling, shaking and physical convulsions. In *A Study of History* Arnold J. Toynbee wrote: "In the first generation of the life of the English Society of Friends a vein of violence, which found vent in naked prophesyings and in noisy disturbances of the decorum of church services, drew down upon its members a savage chastisement both in England and in Massachusetts. This violence, however, was quickly and permanently superseded by a gentleness which became the Quakers' characteristic rule of life." Likewise members of the United Society of True Believers in Christ's Second Appearing, which originated in England in the eighteenth century but migrated to America, are known as *Shakers* from the dancing movements that were once part of their ritual.

Did the Colossus of Rhodes bestride the harbor?

That the Colossus of Rhodes, one of the original seven wonders of the world, stood across the entrance of the harbor, with a beacon of light in an upraised hand and ships passing between its legs, is a fiction that seems to have been invented in the latter Middle Ages. The belief first became common in the sixteenth century and some authorities suppose a French writer named Blaise de Vigenere was the first to assign an impossible position to the famous statue. Shakespeare may or may not have alluded to this erroneous belief in *Julius Caesar* when he had Cassius assert that the dictator "doth bestride the narrow world, like a Colossus," and again in *II Henry IV* when he had Prince Hal say that "nothing but a colossus" could bestride Sir John Falstaff. *Colossus*, a Greek word of unknown origin, was applied by the ancients to any gigantic statue and it is the source of our adjective *colossal*. Rhodes, the metropolis of the island of the same name lying between the Aegean and the Mediterranean seas about ten miles off the Asia Minor coast, was unsuccessfully besieged in 304 B.C. by the Greek general Demetrius Poliorcetes, who, when he withdrew, left behind many engines that had been used in efforts to break down the city walls. Apparently in gratitude for their deliverance from this memorable siege, the inhabitants decided to convert this abandoned metal into an enormous statue dedicated to their national deity, Helios or the sun-god. Chares, a native of the city of Lindos on Rhodes and a pupil of the school of Lysippus, was chosen as the sculptor, and he spent twelve years in producing his masterpiece, which was completed about 280 B.C. The Colossus, the cost of which has been estimated at upward of a quarter of a million dol-

lars, was cast in bronze or brass in separate pieces and was, according to Strabo and Pliny, 105 feet high. Tradition says the thumbs of the statue were so large that an ordinary man could not reach completely around them with both arms. None of the ancient writers refer to the alleged fact that the Colossus of Rhodes held a beacon light in an upraised hand to guide the ships entering and leaving the harbor. There is no trace of the famous statue now and its exact site cannot be determined, but it probably stood somewhere around the harbor and possibly near the entrance. In 224 B.C., after standing only fifty-six years, the Colossus was thrown down by an earthquake, but the great fragments remained on the ground to the wonderment of travelers and writers until 672 A.D., when the Saracens conquered the island and sold the broken pieces of metal as junk to a Jewish merchant, who is said to have employed 900 camels to carry them away. In all probability the metal again found its way into engines of war. Rhodes is one of the Dodecanese Islands. Although *Dodecanese* is from a Greek word meaning "twelve," the group of islands now so known numbers fourteen.

Can tattooing marks be removed?

Tattoo designs are made by pricking the skin with a needlelike instrument and rubbing indelible pigments of various colors into the small punctures. The marks are permanent and seldom disappear of their own accord, although some of them become fainter as the years pass. They can be removed only by removing the skin itself. Tattoo marks are sometimes removed successfully by applying a paste of salicylic acid and glycerin under pressure for a week or ten days and then removing the dead skin. The performance may have to be repeated before the entire skin has been replaced and all signs of the artificial pigments have disappeared. This operation is not always entirely successful and sometimes a slight discoloration remains where the tattoo marks were. It may be painful and attended with some risk of infection. Perhaps the operation should not be attempted except under the supervision of a competent physician. Tattooing and similar practices were once common among primitive peoples in many parts of the world. The term is one of the few words in the English language of Polynesian origin. It is from Tahitian *tatau*, "mark," and was introduced into English by Captain James Cook about 1760. The South Sea Islanders and the East Indian natives are noted for their elaborate tattooing. Among primitive peoples the primary purpose of tattooing seems to have been personal embellishment, although often the figures

tattooed on various parts of the body had a symbolic or heraldic significance, and not infrequently the number and character of the designs indicated the achievements, rank or social standing of the individual. A Samoan youth was not considered eligible for marriage until he had been tattooed from the hips to the knees. Tattooing was practiced but not highly developed among North American Indians. Among some tribes of Indians and Eskimos the patterns represented their clan or totem. Columbus noted that the West Indian and Central American natives tattooed figures of their inferior deities on their skin. As a rule the light-skinned peoples practiced tattooing, while the dark-skinned ones disfigured their bodies by scarifying the skin with red-hot stones. Primitive peoples tattoo themselves by pricking the skin and rubbing into it some substance like powdered charcoal, which produces a deep blue color. Among some peoples tattooing may have served the purpose of identification and been merely a kind of branding. The practice was known to the ancient Hebrews and was forbidden by the Mosaic law. Leviticus 19:28 says, "Ye shall not make any cuttings in your flesh for the dead, nor print any marks upon you." The Saxons in England, before the Norman Conquest, practiced a form of tattooing for the identification of the bodies of men slain in battle. Legend says that Edith, the "Swan Neck," identified the body of her brother, King Harold, on the field after the Battle of Hastings by such marks on his neck. Even at the present time tattooing is used to some extent for identification purposes. The practice has decreased among primitive peoples with the increase of clothing but is still common among civilized peoples, especially among seamen and sailors. As late as 1945 it was reported that at least 90 percent of the men in the American navy bore some tattoo marks. The *Navy Manual* says "a cause for rejection is obscene, offensive or indecent tattooing."

What is whalebone?

Whalebone, formerly widely used in making umbrellas, brushes and corsets, stays and other articles for stiffening women's dresses, is not bone and has none of the properties of true bone. The term is merely a popular but inaccurate name for an elastic, fibrous substance that grows on the roof of the mouth of the right whale and certain other species of whales. Whalebone (more properly called baleen, from Latin *balaena*, "sea-monster" or "whale") consists of a series of thin parallel plates on the palate and is a horny exaggeration of the ridges found on the roof of the mouth of most mammals.

Baleen plates range in length from two to fifteen feet, although they seldom exceed twelve feet even in the largest whalebone or baleen whales. They take the place of teeth and their function is to strain sea food from the water that the whale takes up in large mouthfuls. The commercial value of whalebone is due to its combined lightness, flexibility and toughness. It has been largely supplanted by steel and other materials in making umbrellas and other articles. Whalers prepare the product for the market by boiling it until it is quite soft and then cutting it into strips of the required size. Formerly the whale was often confused with the walrus and other sea animals and "white as whale bone" originally meant "white as walrus ivory."

Who invented the wheel?

Without the wheel, mechanical and industrial civilization would be impossible, and yet nobody knows when, where or by whom this all-important device was invented. The wheel and axle is an elaboration of the principle of the lever, the simplest of all devices for transmitting and modifying motion. Wheels antedate authentic history, perhaps by many thousands of years, and when and by what people they were first used probably will never be known. Fragmentary inscriptions indicate that the principle of the wheel was known to the ancient Chinese, Babylonians and Egyptians. Some authorities are inclined to believe that the wheel in its crudest form may have been known a hundred thousand years ago. The potter's wheel was employed in the Bronze Age many thousands of years before the birth of Christ. A chariot excavated in Assyria is believed to date back to 3200 or 3300 B.C. In Genesis 41 it is related that Pharaoh made Joseph "to ride in the second chariot which he had," and further on in the same Biblical book we are told that the Egyptian king supplied "wagons" for bringing Jacob and his family of sixty-five out of the land of Canaan into Egypt. The Hebrew *agaloth*, rendered "wagon" and "chariot" in the English Bible, stems from a root meaning "to be round" or "to roll" and signifies "wheeled carriage." Perhaps long before that period the Egyptians and Assyrians used wheels with spokes. Generally the early wheels made by these peoples had six spokes, while those made by the Greeks and Romans a few thousand years later had as many as eight. No doubt the original wheel was merely a flat disk of stone or wood with a hole through the center for the axle. Such wheels are still employed by certain backward peoples. Possibly different peoples in different parts of the world, without intercourse with one another, discovered the principle of

the wheel. Very likely primitive man stumbled upon the idea quite by accident. Still the invention or discovery of the wheel must have represented a decisive forward step in the march of civilization. Many primitive peoples never developed wheels until they came into contact with more advanced nations. In Mexico and elsewhere in the New World nations flowered and reached a high degree of civilization without any knowledge of the wheel. The American Indian, who harnessed dogs to draw sledges and *travois*, did not have the crudest wagon, cart or wheelbarrow; and the more advanced Incas of Peru, who employed the alpaca for draught purposes, never devised a carriage of any kind. Who first used the wheelbarrow is not definitely known, but its invention is generally ascribed to Leonardo da Vinci (1452-1519), Italian painter, sculptor, architect, scientist and engineer, who is said to have substituted a wheel for one man in the old handbarrow, which consisted of a box with handles for two men.

Are the eyes of Chinese actually slanted?

The apertures of the eyes of Chinese, Japanese and other members of the yellow race are not more slanted or oblique than are those of Caucasians. The slant-eyed effect is produced by the low nose bridge, which permits the upper eyelids to fold and gives each eye a slit appearance. In reality the eyes of Orientals are not so far off a true horizontal as the eyes of Occidentals. Often white children at birth have eyes with a similiar Mongolian slant, and if the nasal bridge develops slowly this appearance may persist for months. But the so-called "Mongolic fold" is not due to the eyes' being obliquely set but to the difference in the level of the two canthi of each eye—the points on each side where the upper and lower eyelids come together. This slant-eyed effect is noticeable among many American Indians and quite pronounced among the Eskimos.

What causes the tides?

The tides are produced by the gravitational action of the sun and moon upon the rotating earth. Theoretically all the stars, planets and satellites in the universe produce separate and distinct tides, but their influence is imperceptible. The moon, which in *A Midsummer-Night's Dream* Shakespeare calls the "governess of floods," is nearly two and a quarter times more potent as a tide-producing agency than the sun, because the tide-generating force of a body depends not only on its mass but also on its distance from the earth. Although their effect may not always be appreciable, the tide-producing forces exert

themselves on all bodies of water in proportion to their size and depth, even on pools and ponds. The water in a goldfish bowl or in a well hundreds of miles from the sea has tides. It is not true, as is sometimes stated, that there are no tides in such bodies as the Mediterranean Sea and the Great Lakes. The same forces produce tides in these bodies of water, but their area is relatively small and the tides are so slight that they are generally masked by differences in mean level resulting from winds, changes in atmospheric pressure and the discharge of rivers. At Chicago the tide in Lake Michigan rises and falls only a few inches. The subject of tides is exceedingly complex because of the motions of the earth and moon and because the actual operation of the tide-producing forces is modified by numerous local factors, particularly the location and configuration of the oceans. Even the crust of the earth itself is elastic and varies in shape with the regular pull of the moon and sun. All places rise and fall imperceptibly in response to the gravitational pull of the tide-producing agencies. The pull of the moon tends to separate the solid part of the earth from the more mobile waters, which therefore pile up. When the moon is over a body of water it pulls the fluid upward and sets a tidal wave in motion. But the earth and moon are swinging around a common center of gravity and pulling against each other, the moon actually causing the earth to deviate slightly from what would otherwise be its normal path. Therefore, while the moon is piling up the water on its own side of the earth it appears to push it out on the opposite side. In reality the more mobile water merely takes a slightly greater orbit than the solid part of the earth does when the entire earth is held back by the moon. The more or less free water on the opposite side of the earth bulges away from the moon much as the passengers in the rear seat of an automobile are thrown outward when the machine suddenly turns a sharp corner. Thus two vast tidal waves originate at the same time on opposite sides of the earth and sweep through the oceans. The crests of these waves are 180 degrees apart, but their troughs vary in width, depending on the position of the moon. These tidal waves continually sweep through the seas as the earth rotates and produce two high and two low tides in every period of twenty-four hours and about fifty-one minutes. Because of local conditions in many bodies of water, such as the Gulf of Mexico, there is only one noticeable high tide and one low tide a day. During a great part of the time the sun and the moon pull in different directions, or at angles to each other, and produce moderate tides. When the moon and sun act directly against

each other—at the first and third quarters of the moon—the high-water level of the tide stands at its lowest point. This is called neap tide. But twice each lunar month—at new and full moons—the moon and sun pull in the same line and the lunar and solar tides occur at the same time, producing the highest tide, known as spring tide, a term that has no reference to the seasons. When it is low tide on the coast of California it is also low tide on the Pacific coast of northern Japan; but, owing to the location, size and configuration of the Atlantic, there is several hours' difference between low tide on the eastern coasts of the United States and low tide on the western coasts of Spain and France. The United States Coast and Geodetic Survey has developed a "tide-predicting machine," an instrument that indicates the rise and fall of tides at given places for a year in advance. This remarkable mechanism makes precise mathematical calculations and is said to do the work of a hundred mathematicians.

Why are cranberries so called?

Cranberry is the Anglo-Saxon form of *craneberry* and is related to German *Kranichbeere*. Just why the plant and fruit were originally called craneberry is not known. One theory is that the name referred to the fact that at blossoming the slender, curved stem of the dwarf shrub was fancied to resemble the head, bill and neck of the bird called the crane. A similar comparison with this long-necked bird gives us *crane* in the sense of a machine for raising, moving and lowering weights. Many plants are named after the birds, animals and other creatures that feed upon them, and another theory is that the cranberry was so called because people supposed that cranes were fond of the berries of the plant. The name was originally applied to the small European cranberry (*Vaccinium oxycoccos*), which thrives in peaty swamps in northern climates and which was one of the plants sacred to the Druids. It bears bright red berrylike fruit about one-fourth of an inch in diameter and pleasantly acid in taste. This species is not cultivated commercially. The native American cranberry (*Vaccinium macrocarpus*), a different species of the heath family, bears dark red berries about twice the size of those of the small European variety. This species was native in bogs and swamps in eastern America from southern Canada to the Carolinas. In his *History of Virginia* (1705) Robert Beverly wrote that native American cranberries "are of a lively red when gathered and kept in water, and make very good tarts. I believe these are the berries which Captain Smith compared to the English gooseberries, and called Raw comens, having perhaps

seen them only on the bushes, where they are always very sour." The cowberries or *cerises* (*Viburnum lentago*) of the French Canadians are also sometimes called cranberries, but they belong to a different plant family. These small, shriveled, raisinlike berries appear on the markets in Canada and New England, where they are relished by some and regarded as insipid by others. The traditional cranberry sauce served with Thanksgiving and Christmas turkey originated in Massachusetts. The cultivation of native American cranberries began in 1808 in the Cape Cod district, which still produces two-thirds of the American cranberry crop. Canada, New Jersey, Wisconsin, Washington and Oregon also produce cranberries in commercial quantities. Cranberries are used not only in sauces but also in pies, tarts, jellies and cocktails and other beverages, and the dried berries are strung for Christmas-tree and other decorations. Many people refer to them as "cramberries." They are a seasonal crop and "as busy as a cranberry merchant" is a proverbial saying.

Why are firecrackers used at Christmas in the South?

In the northern states firecrackers and other fireworks are used almost exclusively on the Fourth of July; in the southern states they are used almost exclusively at Christmas and New Year's time. There are several reasons for this difference in practice. Firecrackers are believed to have originated in China, where they are used at social, military and religious functions as well as at births and funerals. During the fourteenth century they were introduced into Italy, where they were used from the first on saints' days, Christmas and other religious festivals. This custom, which met with no opposition from the Catholic Church, spread to France, Spain and other Latin countries, where it still survives to some extent. The custom of shooting firecrackers on religious festivals was never common in England, although it is not likely that the Church of England, as originally constituted in the sixteenth century, would have objected to it seriously. The early English settlers in the southern states appear to have borrowed the practice from the Spanish and French inhabitants of Florida, the West Indies, Louisiana and Mexico. The fact that the Puritans of New England frowned on it while the Church of England did not object to it no doubt had much to do with establishing the custom in the South and preventing its introduction in the North. Both in England and in New England the Puritans regarded Christmas as a "Roman corruption of a heathen practice" and as a "human invention without warrant in Scripture." For a time in the seventeenth

century the observance of Christmas by feasting and refraining from work was forbidden by law in England and Massachusetts. To New Englanders shooting fireworks at Christmas time was unthinkable. The day had neither religious nor patriotic significance to them. In the North firecrackers and other fireworks were used on patriotic and military occasions in Colonial times. On July 3, 1776, John Adams wrote to his wife that Independence Day "ought to be solemnized with pomp and parade, with shows, games, sports, guns, bells, bon-fires, and illuminations." After the Revolution firecrackers came to be used in the North chiefly on the Fourth of July, generally regarded by northerners as the most important holiday on the calendar. In the South, Christmas was regarded as a far more important holiday than the Fourth of July. Thomas Jefferson in his youth referred to Christmas as "the greatest day of mirth and jollity." From the beginning southerners looked upon the Fourth of July as a day for political oratory and observed but did not celebrate it. Since firecrackers were used at Christmas time it did not seem natural for southerners to use them on Independence Day. In his *Autobiography* David Crockett wrote: "I hunted on till Christmas, having supplied my family very well all along with wild meat, at which time my powder gave out; and I had none either to fire Christmas guns, which is very common in that country, or to hunt with." And again: "I still insisted, telling her we had no powder for Christmas, and, worse than all, we were out of meat." During the Civil War General "Stonewall" Jackson wrote to his wife: "The enemy are celebrating the 4th of July in Martinsburg, but we are not observing the day." Thus firecrackers became peculiarly associated with Christmas in the South and Independence Day in the North. So many children were injured while shooting firecrackers that their use has been greatly restricted by local ordinances in both sections. Duties were levied on firecrackers from the Orient as early as 1859.

Who invented rayon?

No one person deserves the entire credit for inventing rayon, which is now the recognized trade name in the United States for all synthetic fibers formerly known as artificial or imitation silk, regardless of the process of manufacture. The lustrous filaments of the fiber are made from various solutions of modified cellulose, such as wood pulp and cotton linters in a proper solvent, which are pressed or drawn through orifices and solidified by means of a precipitating medium. In 1664 Robert Hooke, an English experimental physicist, published a book

in which he described a microscopic examination of natural silk and suggested the possibility of producing a similar thread artificially. René de Réaumur, the French scientist, made a similar suggestion in 1734. Perhaps the first patent for the use of nitrocellulose for the specific purpose of manufacturing imitation silk was that taken out in England in 1855 by Georges Audemars of Lausanne. The modern rayon industry, however, did not really begin until after 1884, when Count Hilaire Chardonnet of France patented his method of imitating the silkworm in the production of a filament of cellulose. As a student Chardonnet had worked in Paris with Pasteur, who sought a cure for a silkworm disease, and while watching silkworms convert the cellulose of mulberry trees into silk the young chemist was inspired to imitate their achievement. His first successful silk substitute yarn was exhibited at the Paris Exposition in 1889. In 1923 the National Retail Dry Goods Association of the United States invited a number of associations to form a committee to select a substitute for *artificial silk*, which was considered inadequate and misleading as the name of a new, authentic textile material. After considering many suggestions submitted by the public, *glos* was adopted by the committee on January 25, 1924. This term, however, failed to meet with general approval, and therefore another committee was appointed to choose a more euphonious word. This second committee consisted of twenty men who represented the leading manufacturers and consumers of artificial silk. Its chairman was S. A. Salvage, president of the Viscose Company, pioneer rayon manufacturer in the United States. In a letter dated September 4, 1928, and addressed to the author, Salvage explained how *rayon* was coined: "We started with no idea, but we felt that a two-syllable word would be preferable, and a member of the committee suggested that as the product had a brilliant luster, one syllable should denote brilliancy, and also suggested that that syllable be *ray*, and we finally concluded to tack *on* to it, and thus the word *rayon* was born. There was no connection with the French word *rayon*, and we felt at the time there would not be much confusion over the two words on account of the different pronunciation, but we now know that there would already have been a world-wide adoption of the term *rayon* had it not conflicted with the French word." French *rayon* (pronounced *reh-YONN*) signifies "ray" or "beam." The member of the committee chiefly responsible for the arbitrary coinage of *rayon* is believed to have been Charles Edward Lord (1865-1942), president of the Aberfoyle Manufacturing Company at Chester, Pennsylvania, and pioneer weaver

of artificial silk. The National Retail Dry Goods Association officially adopted the new word May 23, 1924, and other interested organizations soon followed suit. It was later adopted by the Federal Trade Commission, the Department of Commerce, the Department of Agriculture and other federal agencies. The committee probably was not aware of the fact that Rayon had long been the name of an Opata Indian village in Sonora, Mexico.

Is there a tribe of people with tails?

After the Spanish-American War a report from the Philippines said that a United States Army exploring party had discovered in the Luzon jungles an Igorot tribe with tails and that the government had taken charge of the tailed tribe to keep it isolated in the mountains until it should die out. Later what purported to be a photograph of a member of the tailed tribe was published. Postcards bearing the picture were sold in the Philippines and every year for many years thousands of them were carried to different parts of the world by credulous tourists, thus keeping alive the fable of the tailed people of Luzon. Notwithstanding that many veterans of the Philippine Insurrection and travelers were willing to swear under oath that they had seen members of the tailed tribe, scientists who have investigated the subject are unanimous in asserting that the tailed tribe is a myth. Similar reports have been published about tailed races in Africa, China, Borneo, New Guinea and other parts of the Malay Archipelago. Such reports probably originate either in fraud or in careless observation of the costumes worn by some primitive peoples. Many of the Igorot head-hunters of Luzon wore fantastic costumes with tails. That the photograph of the tailed man of Luzon was a fake was proved beyond doubt. The United States National Museum, which obtained "photographs of the same man both with and without a tail," asserted that the report of "a tailed tribe in the Philippine Islands is a hoax which we have exposed." Stories of tailed people were common in ancient times and in the Middle Ages. Of "Lambri" on an island off southeastern Asia, Marco Polo wrote: "In this kingdom are found men with tails, a span in length, like those of the dog, but not covered with hair. The greater number of them are formed in this manner, but they dwell in the mountains, and do not inhabit towns." Although the tailed race is undoubtedly a myth, it is quite possible that there are individual persons with tails in Malaysia as well as elsewhere. Embryologists tell us that every normal human being has a tail during the embryo stage of his existence. According

to Dr. Adolph H. Schultz, research investigator for the Carnegie Institution of Washington, the tail is generally about one-sixth as long as the embryo itself. There are evidences of this rudimentary tail in the body of every adult. As a rule it becomes completely overgrown by neighboring parts as the child develops and it finally disappears from the surface. Occasionally, however, it does not completely disappear before birth and a child is born with an external tail. "These so-called soft tails," wrote Dr. Schultz in the *Scientific Monthly* for August, 1925, "contain no vertebrae, but blood vessels, muscles and nerves, and are of the same consistency as the short tail of the Barbary ape." Many authentic cases of children born with such tails have been reported. A baby born in 1928 at Knoxville, Tennessee, had a tail seven inches long, and several years earlier a boy was discovered in Baltimore with an external tail nearly nine inches in length. The longest human tail of which there is authentic record was a nine-inch tail on a twelve-year-old boy in Indo-China.

How much does the human brain weigh?

The average weight of the adult male brain is 49 ounces; that of the adult female, 44 ounces. Although the brains of men weigh more than those of women, the relative weights of the brain and body of the two sexes are about the same. Women, it appears, have slightly heavier brains than men in proportion to the size of their bodies. Taller and heavier persons generally have correspondingly heavier brains. As a rule in the animal kingdom the larger the brain the higher the animal is in the evolutionary scale, and the brain of man is heavier than that of any animal in proportion to the size of the body. The human brain, a development of the upper end of the spinal column, is probably the most highly developed and complex structure in the world. It contains from nine to fifteen billion nerve cells and neurons and the number is no greater in a large brain than in a small one. The brain cells used in a single mental effort, it is estimated, weigh only one-fourth of an ounce, or .01 percent of the body weight. The "gray matter" represents about 38 percent of the total weight of the brain. At birth the brain is one-third of its ultimate size and comprises about one-eighth of the child's weight. During the first year the weight of the brain increases 200 to 300 percent. At the age of six it reaches almost its full size. Most authorities believe it ceases to grow entirely at about sixteen or eighteen except in unusual cases, although others think it may grow slightly until middle life. At about sixty the brain begins

to shrink somewhat and at eighty it generally has lost about 6 percent of its weight. Experts on brain anatomy disagree upon the relationship between size and quality in brains. Apparently the weight is not a true index to the mentality of the individual. Aleš Hrdlička found that 150 scientists had bigger and broader skulls, indicating larger brains, than the average person in America. He believed that the skulls of "brainy persons" are thinner than those of the average and that their brains continue to grow slightly as long as they are used actively. The brains of living persons cannot be weighed and the weight after death may be considerably less than it was previously. Daniel Webster's brain weighed 53½ ounces, but, judging from the large external measurement, the doctor who made the autopsy inferred that Webster's brain may have weighed as much as 66 ounces in its presenile condition. One of the heaviest brains that has been weighed was that of the Russian novelist Ivan Sergyeevich Turgenev. It weighed 74 ounces. The brain of the French naturalist Cuvier weighed 64 ounces, that of Leon Trotsky 56 ounces, and that of William Makepeace Thackeray, notable for his massive head, 58 ounces. On the other hand, the brain of Gambetta weighed only 39 ounces and that of Anatole France 35 ounces, considerably less than those of average men of comparable stature. There are records of an insane person whose brain weighed 60 ounces and of two epileptics whose brains weighed 62 and 64 ounces respectively. *Pia mater* is the name of the delicate cord and tissue connecting the brain and spinal cord. Literally it means "tender mother," being derived from Latin *pia*, feminine of *pius*, "tender" or "kind," and *mater*, "mother."

Why was the Russian emperor called czar?

Czar, like *Kaiser*, is merely a corruption of *Caesar*, the title assumed by the Roman emperors as a mark of honor to Julius Caesar, who in a sense was the first emperor of Rome. Although the title was used in Russia in the fifteenth century, it was not an official title until Ivan IV ("Ivan the Terrible") formally adopted it when he became ruler of Russia in 1547. The Gothic spelling was *Kaisar*, the source of German *Kaiser*. Since most of our early knowledge of Russia came by way of Germany it is likely that *czar* was influenced by German. At any rate, the spelling *czar* does not conform with Slavic usage and it should really be spelled *tsar* or *tzar*, the Russian form, although *czar*, a Romanized spelling of the Russian, has been established by long English usage. During the Middle Ages the title was assumed by various Slavonic rulers and it was ascribed even to the

Mongol princes in Russia. In fact *tsar* may have a touch of Tartar in it. During the sixth and seventh centuries the rulers of the Avars bore the title *chagan*, from *khaqan*, an Old Turkish word meaning "lord" or "prince." From this source comes *khan*, the title assumed by Turkish, Tartar and Mongol princes and rulers. Genghis Khan and his successors in the capacity of supreme ruler of the Turks, Tartars, Mongols and Chinese bore the title "the Great Khan." *Cham* is an obsolete form of *khan*. Dr. Samuel Johnson was called "the Great Cham of Literature." Russia was long governed by the Tartars after it was conquered by them in the time of Genghis Khan. Victor Hugo wrote that "from the *khan* comes the *knez*, from the *knez* the *tsar*, from the *tsar* the *czar*." The rulers of Serbia, before that kingdom became part of Yugoslavia after the First World War, were called *czar*, and the title was applied to the king of Bulgaria until the Second World War. *Czar* as an official title was abolished in Russia by Peter the Great, who assumed the title of "Autocrat and Emperor of All the Russias," but *czar* continued to be a popular title of the emperor. The wife of the *czar* was called *czarina*, a daughter *czarevna*, and a son *czarevitch*, although the crown prince had the differentiated title *cesarevitch* and his wife *cesarevna*. Nicholas II, who was shot at Ekaterinburg in 1917, was the last *czar* of Russia. In Shakespeare's *The Merry Wives of Windsor* the Host of the Garter Inn says to Sir John Falstaff: "Thou'rt an emperor, a Caesar, Keisar, and Pheezar." *Czar*, now popularly applied to various federal administrators with large powers, was first used in American politics as a nickname for Thomas Brackett Reed in allusion to his arbitrary interpretation of the rules of the House of Representatives while Speaker. *Kaiser* is a German form of *Caesar* just as *czar* is the Russian form of the same Roman name and title. This title was applied to the Holy Roman emperors, the rulers of Austria-Hungary and to Frederick III and William II of Germany, although the title was always used more freely in English than in German. Kaiser William II was a grandson of Queen Victoria of England, who, as ruler of India, in 1876 assumed the title *Kaisar-i-Hind*, or *Qaisar-i-Hind*, "Emperor of Hindustan."

How did *the goose hangs high* originate?

The goose hangs high is an American proverbial saying of obscure origin. It means "the prospects are good" or "all's well." Most etymologists are inclined to regard it as a corruption of "the goose honks high." It is said that the original expression was "Everything is lovely and the goose honks high." The underlying thought of this

theory is that wild geese fly higher in pleasant weather than they do in cloudy or stormy weather and then make the characteristic cry known as honking. Hence when the wild geese honk high it is a propitious omen, a sign of fair weather and good sport. But there is no evidence that *honks* preceded *hangs* in the expression, and the conventional explanation is pure conjecture. The saying may have originated in connection with the tournaments held in many parts of the South since Colonial times. In these tournaments rings are suspended some distance apart and gallant knights armed with long lances and mounted on gaily caparisoned horses are rivals in trying to center the largest number of rings while riding at full speed. The knight who centers the most rings usually receives a prize and is permitted to choose the prettiest girl for the dance that follows. In some sections such tournaments used to end with a "gander pulling," in which a tough old gander whose neck had been picked clean and greased was suspended at a considerable height. Each knight would attempt to pull the gander down while riding at full speed. Often a knight was pulled from his horse. The signal for the knights to charge was, "The goose hangs high!" Of Abraham Lincoln at Salem, Carl Sandburg wrote: "There, too, were the gander pullings. An old tough gander was swung head down from the limb of a tree, with his neck greased slippery. Riders, who paid ten cents for the chance, rode full speed, and the one who grabbed the gander's neck and pulled the head off, got the bird." In *As You Like It* Shakespeare associated *goose* with tournaments, but in a different sense, when he had Celia compare Orlando to "a puisny tilter, that spurs his horse but on one side, breaks his staff like a noble goose."

Why is March 17 St. Patrick's Day?

St. Patrick's Day, March 17, is regarded as an important holiday in all parts of the world where there are Irish or people of Irish descent. Many people erroneously suppose it to be the anniversary of the birth of the Apostle to Ireland. March 17, however, is the traditional day on which St. Patrick died. It is his feast day, not his birthday. The early Christians as a rule did not believe in celebrating birthdays. To them entrance into a world of sorrow, oppression and persecution was no cause for rejoicing. The day of death, which represented release from worldly care and the beginning of eternal peace and glory, was therefore generally chosen as the feast day of a saint. When March 17 was chosen as St. Patrick's day is not known. According to an old story, based on the mistaken notion that March 17 represents St.

Patrick's birthday, the patron saint of Ireland was born about midnight and his family and friends were uncertain whether he was born on the eighth or the ninth of March. Samuel Lover (1797-1868), Irish novelist, song writer and painter, in 1836 put this legend in verse and told how a priest finally settled the dispute. The poem, *The Birth of St. Patrick's* follows:

On the eighth day of March it was, some people say
St. Patrick at midnight he first saw the day;
While others declare 'twas the ninth he was born—
And 'twas all a mistake between midnight and morn;
For mistakes will occur in a hurry and shock,
And some blamed the baby—and some blamed the clock—
Till with all their cross-questions sure no one could know
If the child was too fast or the clock was too slow.

Now the first faction-fight in old Ireland, they say,
Was all on account of Saint Patrick's birthday:
Some fought for the eighth—for the ninth more would die,
And who wouldn't see right, sure they blacken'd his eye!
At last, both the factions so positive grew,
That each kept a birthday, so Pat then had two.
Till Father Mulcahy, who show'd them their sins,
Said, "No one could have two birthdays, but a twins."

Says he, "Boys, don't be fightin' for eight or for nine,
Don't always be dividin'—but sometimes combine;
Combine eight with nine, and seventeen is the mark,
Let that be his birthday."—"Amen," says the clerk,
"If he wasn't a twin, sure our hist'ry will show
That, at least, he's worthy any two saints that we know!"
Then they all got blind drunk—which completed their bliss,
And we keep up the practice from that day to this.

There has been much controversy as to when and where St. Patrick was born. The place of his birth is variously supposed to be Scotland, England, Wales and France. His birth is believed to have occurred about 389 A.D. He seems to have referred to himself as a Roman, and legend says he was born of a Christian family of Roman citizenship, his father, reputedly a man of considerable means, being a Roman official in Britain. When he was sixteen he was captured by pirates and kept in slavery for six years among the people whom he later converted to Christianity. He was arrested and sentenced to death by the pagan Irish twelve different times. It is believed that he died in

Ireland in 461. His grave is not in Southern Ireland but in Ulster. His legendary grave in Downpatrick Cathedral is covered with a great granite slab for which Irishmen of all religious denominations contributed.

What are the names of the wedding anniversaries?

The practice of giving peculiar gifts on various wedding anniversaries originated in Central Europe. Among the medieval Germans it was customary for friends to present a wife with a wreath of silver when she had lived with her husband twenty-five years. The silver symbolized the harmony that was assumed to be necessary to make so many years of matrimony possible. On the fiftieth anniversary of a wedding the wife was presented with a wreath of gold. Hence arose *silver wedding* and *golden wedding*. This practice, borrowed from the Germans, has been elaborated upon in modern times and we now have a long list of wedding anniversaries, which many people, encouraged by commercial as well as sentimental considerations, think should be observed with peculiar gifts. Thus we have the paper wedding, the wooden wedding, the tin wedding and many others. There is some difference of opinion and practice as to the proper names and the appropriate materials of the gifts for the various wedding anniversaries, but the following are the most widely accepted:

First—Paper	Thirteenth—Lace
Second—Cotton	Fourteenth—Ivory
Third—Leather	Fifteenth—Crystal
Fourth—Fruit and flower (or book)	Twentieth—China
Fifth—Wooden	Twenty-fifth—Silver
Sixth—Iron (or candy)	Thirtieth—Pearl
Seventh—Woolen (or copper)	Thirty-fifth—Coral
Eighth—Rubber (or electrical)	Fortieth—Ruby
Ninth—Willow (or pottery)	Forty-fifth—Sapphire
Tenth—Tin	Fiftieth—Golden
Eleventh—Steel	Fifty-fifth—Emerald
Twelfth—Silk (or linen)	Sixtieth (or seventy-fifth)—Diamond

How did *pin money* originate?

In the United States *pin money* is now virtually synonymous with spending or pocket money. It is a small sum set aside especially for incidentals. For at least 250 years the term has been used in England for an allowance made by a man to his wife for her personal and private purposes. The wife has absolute control of pin money and does not

have to account for it to her husband. Pin money is sometimes provided by a special marriage settlement or by a small rent charge to be paid to the wife during her husband's life. The earliest use of *pin money* in this sense recorded by the Oxford dictionary is dated 1697; but in *The Relapse*, a play first produced in 1696, Sir John Vanbrugh wrote:

MISS HAYDEN: Now, nurse, if he gives me two hundred a year to buy pins, what do you think he'll give me to buy fine petticoats?

NURSE: Ah, my dearest, he deceives thee foully, and he's no better than a rogue for his pains. These Londoners have got a gibberage with 'em would confound a gipsy. That which they call pin-money is to buy their wives everything in the varsal world down to their very shoe-ties.

Pin money apparently originated during the latter part of the seventeenth century when the price of pins was very high because of monopoly on them. It is not probable, as often stated, that pin money was originally money set aside especially for the purchase of pins as such. The first pins were probably thorns or splinters of wood. Later primitive man made pins of bone. Although bronze pins date back to prehistoric times, until about the fourteenth century women in England used wooden skewers to pin up their clothes. After that pins were made of ivory, tortoise shell, whalebone, steel and even silver. Such pins, made by hand, were quite expensive, but ordinary pins were not noted for their costliness in those days. The pinmakers' guild of London was incorporated in 1372. In 1543 the size, shape and quality of pins was strictly regulated by law. Pins were not particularly expensive in Shakespeare's time. He used the term figuratively not for something valuable but for a trifle or for the type of something insignificant. Hamlet says, "I do not set my life at a pin's fee"; and "I would not care a pin" and "not worth a pin" occur in other plays. In *Measure for Measure* Isabella tells Claudio: "O, were it but my life, I'd throw it down for your deliverance as frankly as a pin," where *frankly* means freely. During the reign of James I (1603-1625), Shakespeare's contemporary, Parliament protected the domestic manufacture by prohibiting the importation of pins. Gradually the price of pins went up until they cost the equivalent of eight or ten cents apiece. They were regarded as especially appropriate New Year gifts to women. The pin manufacturers paid Charles II a sum each year equivalent to \$2,500,000, which the king gave to his wife, Henrietta Maria, the "Queen Mary" after whom Maryland was named. It was during this period, or shortly thereafter, that *pin money* came into use. There is

no etymological evidence whatever that the term was originally applied to money actually spent for pins. From its inception it appears to have been merely figurative. Manufacturing pins was forbidden in the English Colonies and pins continued to be expensive in the United States so long as they were made by hand. George Washington, according to his account books, paid from ten to fifteen cents apiece for pins. The first successful pinmaking machine was invented in 1832 by John Ireland Howe, of Derby, Connecticut.

Why is rice thrown at newly married couples?

The almost world-wide custom of throwing rice at newly married couples is believed to be a survival of the ancient religious practices of the Hindus and Chinese. Nowadays rice throwing is little more than a joke played by friends and neighbors of a new bride and bridegroom, but long ago the practice was a serious gesture. In the Orient rice is the emblem of fecundity and fertility and throwing it at a newly wedded pair symbolized the wish that they might be blessed with offspring. The custom still retains some of its original significance in India, where the bridegroom throws three handfuls of rice over the bride and the bride then returns the compliment. Southern Europeans often throw fruits, especially figs, at newlyweds, while the Romans used wheat and nuts for the same purpose. In more recent years it has become common on such occasions to use bonbons or confetti instead of rice or other grain. In 1939 church authorities in Sweden pointed out that rice is a valuable article of food and suggested that rose petals be thrown at newlyweds instead. "Eliminate the custom of throwing rice at weddings," advised more than a thousand New York Protestant ministers in 1946 in the interest of food conservation. When a newspaper photographer was married at Chattanooga, Tennessee, in 1940, his colleagues threw some 500 old flashlight bulbs at the pair in place of the conventional rice. In 1946 a minister at Newmarket, England, announced he would charge a confetti fee at weddings "to compensate the verger for cleaning up the mess."

How did *blizzard* originate?

It is often said that *blizzard* in the sense of a storm of violent wind, blinding snow and intense cold originated in the West during the severe winter of 1880-1881. The term was popularized during that stormy winter, but it was used more than ten years earlier to signify a furious blast of cold wind and blinding, cutting snow. This word has a curious history. In all probability it was of echoic or onomato-

poetic origin and was an offshoot of *blaze*, which is from Middle English *blasen* or *blizzon* in Old English dialect. Next the term came to mean a sharp blow or knock. The *Virginia Literary Museum* used *blizzard* in the sense of a violent blow as early as 1829. In the West the word was employed to denote a shot or a volley of shots, a stunning blow or an overwhelming argument. David Crockett employed it in both the literal and figurative senses. In *A Tour down East* (1834) the Tennessee congressman said: "A gentleman asked me for a toast; and, supposing he meant to have some fun at my expense, I concluded to go ahead, and give him and his likes a blizzard." Elsewhere Crockett wrote: "I saw two more bucks, very large fellows too. I took a blizzard at one of them, and up he tumbled." Apparently the term came to mean a blinding snowstorm or "howler" about the time of the Civil War. One of the most memorable blizzards in the United States occurred in March, 1888. It swept from the Rocky Mountains to the Atlantic seaboard. The snow tied up New York City for a week and is said to have been so deep that one standing on it could touch the tops of lampposts. Former Senator Roscoe Conkling died from overexertion during this storm, and Walter Rauschenbusch, noted Baptist clergyman and writer, became deaf as a result of his going out into the blizzard in New York City to minister to sick and needy parishioners before he had fully recovered from influenza. "The Blizzard men of 1888," composed of those who survived it and can remember it, still hold reunions on the anniversary of the great storm.

What is the Great Divide?

Divide is a precise geographical term that describes the line, ridge or watershed separating the waters of two drainage systems. *Water-shed*, which some authorities suppose is an Anglicization of German *Wasserscheide*, "water-parting," originally had the same meaning; that is, a line of high land that divides the waters flowing in one direction from those flowing in the other. The Continental Divide of North America consists of a continuous line extending north and south from the Arctic seas to the boundary between Panama and Colombia. As a general rule, in the United States it follows the most elevated parts of the Rocky Mountains. Water that falls east of this line flows into the Atlantic, and that that falls west of this line flows into the Pacific. *The Great Divide* is merely a popular term, more or less indefinite in meaning, that is applied to a vast region in Wyoming, Colorado, Montana and Idaho traversed by the Continental

Divide. The term is employed in somewhat different senses in different sections of the country. In 1928 John G. Marzel, state geologist of Wyoming, wrote to the author as follows:

It is quite hard to frame a precise definition of the more or less nebulous expression *the Great Divide*. Instead of being limited to some narrow line of critical and immovable location, the foregoing term seems to take in an ever widening territory year by year. At the present time, the entire areas of Wyoming and Colorado are often called the Great Divide. In those two States the Rocky Mountains reached their maximum degree of development, and as a result, their average elevation of 6,700 feet and 6,800 feet, respectively, are the highest of all the States. Over that vast area of mountainous terrain, quite similar climatic conditions prevail, and as the entire region is traversed in a central position by the Continental Divide, the growing custom of designating it under the name of the most famous geographic feature would appear to be well founded.

It should not be presumed that the Continental Divide always follows the highest crests of the mountain ranges. There are places, in Wyoming, for instance, where the traveler would never suspect that he was crossing the Continental Divide. Sometimes the divide line traverses a plain or highland plateau many miles from the nearest mountain peak. In such places it is impossible to locate the exact divide line without surveying instruments. Even with such instruments it may be practically impossible to determine the critical level when lakes occur on these great heights. Perhaps the most famous body of water of this kind is Isa Lake (*Isa* from Greek *iso*, "equal") in Wyoming on the Yellowstone Park plateau. This appropriately named lake has two outlets of equal elevation, and from one water flows into the Atlantic and from the other into the Pacific. Since North America is bordered by three coasts—Atlantic, Pacific and Arctic—strictly speaking, says the United States Geological Survey, the true Continental Divide should include the little known and probably indistinct water-parting between the streams flowing into the Arctic and the streams flowing into the Atlantic. The Atlantic drainage system, of course, includes the Gulf of Mexico. Figuratively *great divide* is applied to an important decision, to a crisis, and to death—"the undiscovered country from whose bourn no traveler returns."

Do snakes charm birds?

There is an old belief, still quite prevalent, that snakes are endowed with power to charm or hypnotize birds, small mammals or human beings. In *The History of the Dividing Line* (1729) William Byrd

of Westover wrote: "The way these Snakes (rattlers) catch their Prey is thus: They Ogle the poor little animal, till by force of the Charm he falls down Stupify'd and Senseless on the Ground." Naturalists do not take much stock in this belief. That snakes possess such power of fascination over their prey probably arose from their curious and uncanny habit of resting motionless with lifted head and unmoving eyes and the fact that birds, squirrels, rabbits and other small creatures that have been bitten are sometimes observed struggling close to snakes that have not yet seized and swallowed them. According to naturalists, the phenomenon known as charming or fascination, if there is such a phenomenon, is undoubtedly the result of intense fear. That birds and animals go through queer capers in the presence of serpents is not questioned. Neither birds nor snakes, however, act naturally in captivity and we are compelled to rely largely upon observations made by chance in the field under normal conditions, where the observers, generally untrained, interpret the actions of the birds and animals to suit their own preconceived notions. All experiments made with animals and birds in captivity indicate that snakes possess no occult or mysterious power of fascination in the sense of arresting motor volition. When birds and animals find themselves in the presence of a snake they often may be seized with the same kind of paralysis of fear that deprives a person of the power to save himself from approaching danger. The odd antics of birds around snakes can be accounted for in another way. Many birds attempt to decoy snakes away from their eggs or young. Others have a habit of annoying creatures they dislike or fear. Possibly in some cases they are attracted merely by curiosity. Frequently birds will flock around an owl that has ventured abroad in daylight. In the same manner they sometimes congregate about a snake. But live animals and birds placed in cages with snakes in zoos generally are completely indifferent to the serpents until attacked.

Why are peacock feathers considered unlucky?

Some people will not keep peacock feathers in their homes because they consider them unlucky. This superstition is probably of ancient origin. The peacock, or more properly the peafowl, belongs to the pheasant family and is native to the hill country of southwestern Asia, where it is still found in the wild state. Among certain castes in India the peafowl is protected as a sacred bird. Introduced into Europe in ancient times, it became sacred among both the Greeks and the Romans, by whom it was regarded as the favorite bird of Juno,

guardian of the female sex and patroness of happy marriages. Peafowl feathers were placed in the temples of Juno and it was regarded as sacrilegious for anybody except the priests to handle them. The ancients believed that Juno's anger was excited by plucking the peacock and that no suitor would call at a house where the sacred feathers were kept. It may be that the superstition that peacock feathers are unlucky resulted from a taboo placed on peacocks by the pagan priests. Since these beautiful birds were kept about the temples and their train feathers would be sought by women, the priests, to protect the birds, may have encouraged the belief that no suitors would call at the home of a woman who had peacock feathers in her possession. Some suppose that the superstition that associates peacock feathers with misfortune and bad luck is based on an ancient mythological tale. According to the most usual version of a Greek myth, Jupiter fell in love with the beautiful Io and, to protect her from the wrath of his jealous wife Juno, transformed her into a white heifer; whereupon Juno, who saw through the trick, persuaded her husband to give her the heifer, which she placed under the surveillance of Argus, a fabulous being with a hundred eyes, fifty of which remained open even when Argus was asleep. Jupiter, feeling sorry for poor Io, sent Mercury to slay Argus and deliver her, a task that Mercury accomplished by winning the confidence of Argus with stories and lulling his hundred eyes to sleep with soothing tunes on a lute. Juno, in memory of Argus, metamorphosed him into a peacock, her favorite bird, and transferred his eyes to its train, where they still form the beautifully colored disks. From this story *Argus-eyed* acquired the meaning of jealously watchful, and the peacock's train became the emblem of the evil eye. Contrary to the general notion, the train feathers of the peacock are not of many colors, but plain black. The brilliant colors of the disks are produced by the refraction of light. There is also a variety of peafowl that is white. Five hundred years ago the knights of Staverden Castle in The Netherlands adopted white peacock feathers as their crest and until modern times several hundred white peafowl were kept at Staverden on the only white peafowl farm in Europe.

What does "fool or physician at forty" mean?

"A man is either a fool or a physician at forty" is an ancient proverb that means that if a person has not learned to live properly and take care of his health by the time he is forty he must be a fool. The saying, with the age changed, is generally attributed to the

Roman emperor Tiberius Caesar on the strength of a statement made by Tacitus in his *Annals*. Of Tiberius, Tacitus wrote: "But even while his strength was fast failing he gave up none of his debaucheries. In his sufferings he would simulate health, and was wont to jest at the arts of the physicians and at all who, after the age of thirty, require another man's advice to distinguish between what is beneficial or hurtful to their constitutions." The Roman historian Suetonius quoted Tiberius as saying, "Every man at thirty is either a fool or a physician," and adds: "He enjoyed excellent health, which was all but perfect during nearly the whole of his reign, although from the *thirtieth* year of his age he took care of it according to his own ideas, without the aid or advice of physicians." In his essay on health Plutarch wrote: "I have heard that Tiberius Caesar once said that a man over sixty who holds out his hand to a physician is ridiculous." The famous author of the *Lives* admitted that "to me that seems a pretty strong statement." Although Plutarch quoted the emperor as saying *sixty* instead of *thirty* or *forty*, in all probability *thirty*, as given by Tacitus and Suetonius, was the age mentioned in the proverb in its original form. In the course of time the English may have condensed the saying and substituted *forty* for *thirty* to get the alliterative effect of the three *f* sounds—"fool or physician at forty." In the seventeenth century Thomas Fuller quoted it as, "every man is a fool or a physician at forty," while James Howell quoted it as, "Everyone is a fool or a physician to himself after thirty." Perhaps in allusion to the proverb Elizabethan writers often associated *fool* and *physician*. Shakespeare, in *The Merry Wives of Windsor*, puts the following words in the mouth of Mistress Quickly: "Nay, said I, will you cast away your child on a fool, and a physician?" The reference is to Doctor Caius, a French physician, who is courting Mistress Anne Page.

Have dogs always barked?

Barking is a form of vocal expression that seems to have been acquired by dogs since their domestication. Wolves, foxes, wild dogs and other members of the canine family in the natural state howl, growl, yelp, whine and make other characteristic noises, but they never produce sounds properly described as barking. Dingoes, the wild dogs of Australia, do not bark in their natural state. The dogs found among the Indians when Europeans first visited America are believed to have been more recently descended from the wolf than were the domestic dogs of the Old World. Early writers observed not only that these Indian dogs were savage and ugly in temper but that

they howled rather than barked. When Columbus visited the island of Santa Marta in the West Indies in 1494 he found among the natives a breed of small white domesticated dogs that neither barked nor howled. This breed is extinct. Even dogs that had been carried to the New World by Columbus and his companions were said to have lost their propensity for barking after they had been in the West Indies for several years. In the *Federalist Papers* Alexander Hamilton quoted a French writer (Abbé Raynal) as having said that all animals and human beings degenerated in America and that dogs ceased to bark after breathing American atmosphere for a while! Juan de Nova, lying between Africa and Madagascar, is known as the "Island of Barkless Dogs" because it is inhabited by a breed of dogs that cannot bark. An ancient writer referred to the fact that shepherd dogs in the wilds of Egypt had lost the faculty of barking. A breed of domestic dogs in the Belgian Congo known as *basenji*, "bush things," do not ordinarily bark but make only a growling or "rumbling" noise. Individual dogs have been trained not to bark under any circumstances. The characteristic noise uttered by the coyote or American "prairie wolf" is a dog-like yelping, half-howl and half-bark, and Thomas Say, the first naturalist to describe this species, named it *Canis latrans*, "barking wolf." The cry of the American gray or timber wolf is a prolonged and steady deep-base howl, unbroken into anything like a true bark. It is a singular fact that, while wolves and wild dogs do not bark in the natural state, when Australian dingoes, Eskimo sledge dogs and other wild canines on the border line of dogdom are placed in company with domestic dogs they soon acquire the barking habit, apparently by learning to imitate them. Although barking seems to be as natural to the domestic dog as purring is to the cat or grunting to the hog, the habit evidently has been developed in the gentler environment made possible by the dog's association with man. It would be going rather far to state it as a fact, but it almost seems as if human speech had influenced the dog and caused it to develop a form of vocal expression unknown to its wild ancestors.

Is a bullet's greatest penetrating power near the muzzle?

A bullet does not necessarily have its greatest penetrating power close to the muzzle of the gun from which it is fired. Penetration is not the measure of striking power and depends on the type of bullet and the composition of the object it strikes. A bullet has its greatest striking power where it has its maximum speed, which is generally near the muzzle of the gun; but it does not always have its greatest

penetrating power at that point. A bullet may have more penetrating power at thirty feet than at two feet from the muzzle because, as one writer expressed it, the bullet "goes to sleep" like a top and loses its "wobble." Full metal patch bullets that are not supposed to upset upon impact give the greatest penetration at or near the muzzle of the gun. On the other hand, bullets that are supposed to upset or "mushroom" upon impact give the greatest penetration at their extreme ranges, or at the point where the velocity is decreased to such an extent that the expansion does not occur upon impact. For instance, the .30 Winchester center-fire cartridge, with the soft-point bullet, has a penetration of eleven "boards," whereas the same cartridge with the full patch bullet will penetrate fifty boards, the energy of both being the same. Other things being equal, the bullet that resists deformation most will generally give the maximum penetration. The bullets used in the army service rifles at the time of the First World War usually gave the greatest penetration at fifty to fifty-five yards from the muzzle. Tests show that pointed bullets fired into sawdust, sand, loam and materials of similar description have an increased penetration at long ranges. When pointed bullets were fired into moist sand the penetration was 10 inches at 50 feet, 14 inches at 100 yards, and 16 inches at 500 yards. When the same type of bullet was fired with equal force into boiler plate the penetration was .5 of an inch at 50 feet, .4 at 100 yards, and .1 at 500 yards. Some materials offer less frictional resistance to soft bullets than they do to hard ones. The penetration of wax bullets might be greater in some substances than lead bullets of the same shape and size fired with the same force.

What species of fish is used as a candle?

The oolachan, a species of fish found in the regions of the northern Pacific, is so fat and oily that when dried it can be used as a candle or lamp by merely drawing a wick through it. Although several species are called candlefish, the name is correctly applied to *Thaleichthys pacificus*, which the Flathead or Salish Indians designate by a native word variously rendered *ooklachan*, *oulachan*, *oolachan*, *eulachan*, *uthlecan* and *hoolikan*. These fish, which average about a foot in length, ascend the rivers of the Northwest in such great numbers that the streams are choked with them. The Flathead and Alaskan Indians use dried oolachans as lamps by pulling through them wicks of rush pith or inner cypress bark. In *Astoria* (1836) Washington Irving wrote: "Toward spring . . . the fishing season commenced—the season of plenty on the Columbia. About the beginning of February, a small

kind of fish, about six inches long, called by the natives uthlecan, and resembling the smelt, made its appearance at the mouth of the river. It is said to be of delicious flavor, and so fat as to burn like a candle, for which it is often used by the natives. It enters the river in immense shoals, like solid columns, often extending to the depth of five or more feet, and is scooped up by the natives with small nets at the end of poles." Some of the Indians living along the Penobscot River in Maine are said to have used a fresh-water species of fish for candles in the same manner. The Japanese used to make lanterns of dried, inflated "puffer fish." Some species of the sea birds known as petrels are so fat and oily that the inhabitants of the Faeroe Islands use them as candles simply by putting a wick in the dead bird's body. In his life of Artaxerxes, Plutarch wrote: "Now there is a small Persian bird, in the inside of which no excrement is found, only a mass of fat, so that they suppose the little creature lives upon air and dew."

What are electric eels?

So-called electric eels are a family of large, eel-like Central and South American fresh-water fish that generate electricity in their bodies and have the power of voluntarily discharging electric shocks strong enough to paralyze or kill small fish and mammals and to stun human beings and large animals. These fishes, some species of which attain a length of eight feet and a weight of fifty pounds, are not closely related to the true eels, but are long, sinuous cousins of catfish, carps and suckers. Certain skates, torpedoes, rays and catfish also are capable of discharging electricity in a lesser degree. The living batteries or electric organs, though somewhat different in different species of electric fish, consist essentially of modified muscular tissue abundantly supplied with nerves and nerve cells. It is supposed that all nerve impulses in animals are electric in origin. The battery of an electric eel may be merely a greater development of the organs that generate electricity in minute quantities in other animals. Apparently the electric shocks serve the double purpose of defending the electric fish from its enemies and of rendering swift-swimming fish on which it feeds helpless by benumbing them. Large fish bearing no external signs of injury are sometimes found in the stomachs of electric rays, indicating that electric shocks deprived them of their ability to escape. Electric eels live in quiet shallow waters and more than one traveler in Brazil and the Guianas has reported that his horse was knocked down by an electric eel while fording a river or bayou. Baron von Hum-

boldt, German traveler and naturalist, related that the natives of Brazil, who prize electric eels as food fish, were in the habit of exhausting their electric powers before catching them by driving horses through the water. The intensity of the shock, according to Humboldt, sometimes caused the horses to drown. Formerly the stories of the intensity of the shock were considered exaggerated and accepted with reservations. It is now known that a large electric eel can produce intermittently a charge of about 600 volts of electricity—enough to kill a man. There are fairly well authenticated records that horses have been knocked over by repeated shocks from electric eels. An electric eel at the New York World's Fair in 1939 supplied enough current to operate a radio and a miniature train and to light a series of 300 neon bulbs. A year later one of these fish supplied enough electricity to send a telegram from the New York World's Fair to Mrs. Franklin D. Roosevelt in Washington. A person who steps on an electric eel in the sand or mud is likely to receive a very painful shock if he is not actually stunned. Even the mere touching of a boat by an electric eel has been known to make the nerves of the occupants tingle for an hour, and a perceptible shock from the fish can sometimes be felt some distance away. The current passes through the body of the electric eel from its tail to its head, the posterior end being positive and the anterior end negative. In some electric fish, such as the electric catfish of the Nile, the direction of the current is reversed. In all species of electric fish the power to generate electricity is soon exhausted and a short rest is required to restore it. The ancients employed the marbled electric ray found in the Mediterranean Sea and the Atlantic and Indian oceans to give electrical treatment to persons with rheumatism, gout and other physical ailments. In the second century A.D. Galen, a Greek physician at Rome, recommended the shock from an electric fish for curing severe headache. Certain deep-sea fish are equipped with similar organs that generate a cold light. Even some plants give a slight electric shock to anybody who touches them.

How did *Mother Goose* originate?

Mother Goose appears to have become associated with nursery rhymes and jingles in a roundabout way. In 1697 Charles Perrault, French author, published a collection of fairy tales entitled *Histoires ou contes du temps passé avec des moralités*. On the frontispiece was pictured an old woman engaged in spinning yarns and telling stories to a man, a girl, a boy and a cat. A placard near the picture says

Contes de ma Mère l'Oye, "Tales of My Mother Goose." This book did not contain nursery rhymes at all, but was a collection of wonder and folk tales for children, including *Little Red Riding Hood*. Only three of the pieces were original with Perrault. He probably chose Mother Goose as the imaginary relater of the tales because she was already at that time proverbial in French folklore for incredible tales. An allusion in François Rabelais (1493?-1553) suggests an association between tall tales and the goose. *Mother Goose*, according to Andrew Lang, was employed in 1650 in Lorret's *La Muse Historique*. Perrault's book was popular at the court of Louis XIV, and apparently an English translation was published in London in 1729 by Robert Sander. Ten years later—November 12, 1739—an advertisement in a bookseller's catalogue asserted: "Mother Goose's Stories of Past Times, writ purposely for the Innocent Intertainment of Children, and yet are so contrived by the Author, that not only children, but those of Maturity have found in them uncommon Pleasure and Delight: As an Instance of which the famous Perrault was so taken with them that he made the Morals to them himself, knowing they tended to the Incouragement of virtue, and the Depression of vice; the former of which is ever rewarded in them, and the latter ever punished." The connection between Mother Goose and collections of English nursery rhymes was undoubtedly borrowed from Perrault's book. According to a common story that has never been positively proved, a book of nursery rhymes entitled *Songs for the Nursery, or Mother Goose's Melodies for Children* was published at Boston by Thomas Fleet in 1719, ten years before Perrault's book was published in English. In 1715 Fleet married Elizabeth Vergoose, the daughter of Isaac and Elizabeth Foster Vergoose. Fleet's mother-in-law was born in 1665, married Vergoose in 1693 when she was twenty-eight and died in 1757 at the age of ninety-two. The family name, it is said, was generally shortened to *Goose* and Elizabeth Goose was known as Mother Goose in her later years. The book published by Fleet, according to the story, was a collection of rhymes and jingles that his widowed mother-in-law was in the habit of singing to her children and grandchildren, and accordingly *Mother Goose* in the title referred to Mrs. Isaac Goose (Vergoose), a real flesh-and-blood woman who lived in Boston. There is positive proof that Thomas Fleet printed *Verses for Children* in 1719, although no known copy of the work is extant and there is no means of ascertaining the exact nature of its contents. If *Mother Goose* appeared in the subtitle of Fleet's book, as it may have, it was probably borrowed from Perrault, whose work was famous in France.

Still it is possible that the fact that his mother-in-law's name was Vergoose may have induced him to make use of it in his subtitle. Very likely some English or American printer brought out a book of nursery rhymes early in the eighteenth century with *Mother Goose* in the title. It has been suggested that a Boston printer would hardly bring out a book of such trivial rhymes as early as 1719. It is known, however, that in 1780, during the American Revolution, John Newberry of London published a little book entitled *Mother Goose's Melody, Solace for the Cradle, in Two Parts*. "Part One," declared the title page, "contains the celebrated songs and lullabies of the good old nurses calculated to amuse children and to incite them to sleep." The material in this Mother Goose book was entirely different from that in Perrault's fairy-tale book, of which it was not a translation, as is often carelessly asserted. *Mother Goose* is not indigenous to English folklore, but most of the original Mother Goose rhymes were derived from that source. Like the fables attributed to Æsop, the rhymes were gathered from widely scattered sources. Some of them originally were satires on prominent persons in church and state, others were popular songs and still others were nonsense jingles composed to amuse children. As the years passed editors added and eliminated rhymes. Most of the so-called Mother Goose rhymes cannot be traced farther back than the early part of the eighteenth century, although a few of them may have been handed down by word of mouth from an earlier date. Some scholars attempt, without much success, to interpret the majority of these jingles as carefully disguised satires on men and women who, because of their prominence, were beyond the reach of more direct criticism. For instance, the king referred to in *Sing a Song of Sixpence* is said to be Henry VIII and the maid in the garden Anne Boleyn. Little Miss Muffet in real life was Mary Queen of Scots and the big spider that sat down beside her was John Knox. The "crooked man" was General Sir Alexander Leslie, of Scotland, the "crooked sixpence" he found was Charles I, and the "crooked stile" was the English-Scottish border. Little Jack Horner was John Horner, steward to the Abbot of Glastonbury when the monasteries were dissolved under Henry VIII. A deed to the Manor of Mells, near Glastonbury, was concealed for safety in a pie and sent to the king by Jack Horner. While on the way to London with the pastry the steward, because he was either curious or hungry, lifted a corner of the crust of the pie, took a peek at the contents and discovered the deed to the manor. Just what Jack Horner did after discovering the "plum" is not clear, but, according to the legend,

the steward became Sir John Horner and the master of a considerable estate. Perhaps he was rewarded by the king for his faithfulness in delivering the document, or perhaps he took advantage of his knowledge of the paper's importance to advance his interests. At any rate Sir John left descendants who were sufficiently proud of what happened to preserve the story of the family tradition. One difficulty with this story is that there is no evidence that the nursery rhyme about Little Jack Horner existed earlier than about 1750—more than 200 years after the alleged incident. Most such interpretations of Mother Goose rhymes are largely fanciful. Samuel Latham Mitchill (1764-1831), "the Nestor of American Science," proposed to Americanize Mother Goose. He suggested that the second stanza of *Sing a Song of Sixpence* be amended to read:

When the pie was opened,
The birds they were songless;
Was not that a dainty dish
To set before Congress?

Why is a kind of tobacco called Burley?

The circumstances under which *Burley* came to be applied to a type of tobacco are not known. Apparently the term has no connection with the adjective *burly* in the sense of bulky, stout, sturdy and rough. *Burley* is believed to be derived from an early tobacco grower. Since *Burley* occurs as a family name among the early planters of Virginia it has been suggested that the tobacco received its name from one of the original colonists at Jamestown and was taken from that region to Kentucky. This suggestion is given a degree of plausibility by the fact that strains of tobacco, as well as other plants, are often given the names of prominent growers. Several different varieties of tobacco have borne the name; as, stand-up Burley, red Burley, little Burley and white Burley. Before the Civil War little Burley was a common tobacco in Kentucky. White Burley, now the most extensively grown variety in the United States, was originated in Ohio about 1864, presumably as a mutation from the green-colored little Burley. Nowadays *Burley* generally means white Burley. It is a thin-bodied tobacco, with broad leaves that are usually light-colored when cured, and has other definite characteristics, owing chiefly to soil and climatic conditions and methods of cultivation and curing. Kentucky and adjacent territory is the center of the Burley industry, and Lexington and Maysville, Kentucky, are the principal Burley markets in the world, the tobacco being sold at auction in loose leaves. Originally

Burley was regarded as a harsh tobacco and was used chiefly in plug form for chewing and in pipe mixtures, but now the lighter-bodied grades are widely used with other varieties in cigarettes. Ordinary Burley contains about 2 per cent of nicotine, while many heavier varieties of tobacco average from 3 to 4 and run as high as 7 per cent of nicotine.

Are oysters edible in months with no *r* in the name?

The belief that oysters, no matter when plucked, are inedible in months with no *r* in the name still persists despite efforts to dispel it. Fresh oysters taken from unpolluted waters are edible in all months, but during the spawning season and a considerable period thereafter—May, June, July and August in northern latitudes—they are comparatively thin, stringy in texture and flat in taste. The *r*-month belief arose from several circumstances. Among the Romans and other ancients around the Mediterranean, oysters were a seasonal sea food because they spoil easily and there was no known method of preserving them during hot weather. In *Dyet's Dry Dinner* (1599) Richard Buttes wrote: "It is unseasonable and unwholesome in all months that have not an R in their name to eat an oyster." A year later William Vaughan wrote in *Directions for Health*: "Oysters must not be eaten in those months, which in pronouncing want the letter R." Soon thereafter Parliament forbade dredging for oysters from May to September. This "summer holiday" was to protect the oysters during the spawning season rather than to protect the eaters of oysters. It is merely a coincidence that in northern latitudes the spawning season of oysters falls in the four months that have no *r* in the name. The early English colonists brought their notions about oysters to America with them. Those who settled along the seacoast, where fresh oysters were available at all times, generally ate the mollusks throughout the year. Oysters do not die at once after being taken from the bed, and those eaten immediately are still alive. Opened oysters and oysters in bulk on the market are generally dead. In time the Colonies (and later the states) followed the precedent set by the British Parliament and forbade the plucking of oysters during the spawning season. Farther inland the colonists, who of course were without refrigeration, would not eat oysters that had been plucked and shipped in hot weather. Gradually a general notion evolved that the laws passed to protect oysters during the spawning season were designed to protect the people from a sea food that was unfit to eat during that season. Modern methods of refrigeration and preservation make it possible to serve

during the no-*r* months oysters that have been plucked during the *r* months when the mollusks are at the peak of plumpness and flavor. But the belief that oysters, no matter when plucked, should not be eaten in months without an *r* in the name is still widespread and a handicap to the oyster industry. The demand for oysters during May, June, July and August is so small because of the proverbial taboo that dealers often do not stock and chefs do not serve them in those months. From two to five years, depending on the region, are required for an oyster to reach marketable size. Generally speaking, the older the oyster the more tender its meat.

Who invented the electric light bulb?

The electric light bulb was the result of a series of experiments and discoveries and no one person deserves the entire credit for its invention. Thomas A. Edison did not make the first electric light bulb, as is generally supposed; but he did make the first practical one that was manufactured and marketed. All early uses of electricity for lighting were with arc lamps. The luminous substance in arc lamps is gradually consumed, while in incandescent lamps it is not consumed. Attempts to make arc electric lights were made before the close of the eighteenth century. Sir Humphry Davy in 1802 produced an arc light by heating carbon and metal strips to incandescence with an electric current, and in 1809 he demonstrated it before the Royal Institute in London. In 1844, three years before the birth of "the Wizard of Menlo Park," Jean Foucault, using Davy's principle with improved apparatus, produced an arc light sufficient to light the Place de la Concorde in Paris. Eleven years later, in 1855, Jules Duboscq exhibited an improved arc lamp at the Paris Exposition. Late in 1876 Paul Jablochhoff, Russian electrical engineer living in Paris, produced his "electric candle," the first really practical arc light, which was widely used in Europe for several years. In 1878 Charles Brush, of Ohio, patented an arc lamp, which was first used to light a public square in Cleveland April 29, 1879. The streets of several American cities and towns were lighted with Brush arc lights before Edison perfected his electric light bulb. Meanwhile a number of inventors had been working on incandescent electric lamps with varying degrees of success. The chief problem was the production of a satisfactory filament. Sir Joseph Wilson Swan, English physicist, as early as 1860 had produced a crude electric light with a carbon filament made by packing pieces of paper with powdered charcoal in a crucible and subjecting them to high temperatures. A fine strip of this carbonized paper

was mounted in a glass vacuum and connected with a battery. The battery, though sufficient to make the carbonized filament red hot, did not raise it to complete incandescence, but the method was essentially the same as that employed by Edison nineteen years later. Swan continued to improve the filament, finally making one by parchmentizing cotton thread by the action of sulphuric acid, and on December 18, 1878, he exhibited a successful carbon filament lamp at Newcastle upon Tyne. On October 20, 1880, he gave in the same city the first public exhibition of electric lighting on a large scale by means of glow lamps. Almost a year earlier to the day—October 21, 1879—Edison, after making about 2,000 experiments and spending some \$42,000 on fruitless attempts, had succeeded in making a commercially practical incandescent electric lamp in which a loop of carbonized cotton thread glowed in a vacuum for forty hours. Made with the inventor's own hands, this lamp was the beginning of the electric light industry. This original Edison lamp was presented to Henry Ford in 1932 by Charles Yale, who collaborated with Edison in developing incandescent lamps. Carbon filaments were in time replaced by osmium, tantalum and tungsten.

Do cardinals ever wear their red hats?

The most distinctive feature of the insignia of Roman Catholic cardinals is the red hat, which as a vestment dates from 1245 A.D., when Pope Innocent IV bestowed it on secular cardinals. In 1591 Pope Gregory XIV extended the privilege of wearing the red hat to cardinals belonging to religious orders. It is often said that the color of the hat was chosen as a symbolical reminder that the cardinals should always be prepared to shed their blood for Christ and the church. That, however, was probably not the real reason. During the Middle Ages red was the distinctive royal color throughout Christendom. Only sovereigns and princes were permitted to wear red garments or to decorate their residences with material of that color. Red is still the royal color of England. Some cite the Bible as the source. Nahum 2:3 says, "The shield of his mighty men is made red, the valiant men are in scarlet." According to the formula recited at his coronation, the pope was "the father of princes and kings, the ruler of the world on earth, the vicar of our Lord Jesus Christ." The pope ranked as the first sovereign of Christendom, the cardinals bore the title "Princes of the Church," and the papal legates took precedence even over kings and princes. Red was adopted as the distinctive color of the princes of the church. The papal throne, the walls of the pope's

private apartments and the audience chamber in the Vatican reserved for kings and princes was covered with crimson damask. As now made, the cardinal's red hat is scarlet in color and has a small flat crown and a broad brim with cords and tassels of special patterns hanging over it. The red hat is so closely associated with the princes of the church that when a man is elevated to the rank of cardinal he is popularly said to receive the red hat. It is placed on the head of the newly created cardinal by the hand of the pope himself at a public consistory. But the red hat is very seldom worn afterwards. It is usually put aside until the funeral obsequies of the cardinal, when it is laid on his catafalque. In the absence of the cardinal, and sometimes after his death, the red hat may be hung from the roof of the cathedral. The color of the cardinal's hat has become known as cardinal red, and a species of American songbird is called the cardinal from the male's brilliant red plumage. Since about the fifteenth century the obligatory ceremonial headgear of Catholic clerics has been the *biretta*, a term derived through Italian from Late Latin *birretum*, "cap." The biretta, originally a skullcap worn by members of the church choir, is a stiff, square cap with three or four ridges or projections extending outward from a tasseled center. Rank is distinguished by the color of the biretta, that of the pope being white, of cardinals scarlet, of bishops purple and of priests and other clerics black.

Does any species of bird have teeth?

"Scarce as hen's teeth" is a proverbial saying that refers to the fact that fowl are toothless. No extant species of bird or fowl has teeth, but scientists have found many fossils of prehistoric feathered creatures that had teeth. In fact it is believed that all birds had teeth until the geological period known as the Tertiary. A bird swallows food without chewing it and it is ground by gravel in the gizzard.

How were the Big Berthas constructed?

The mammoth rifled cannon with which the Germans bombarded Paris in 1918 from a distance of more than seventy-five miles were popularly called Big Berthas in allusion to Frau Bertha Krupp von Bohlen and Halbach, in whose factory at Essen the guns were made. When Friedrich Alfred Krupp died in 1902 the Krupp Iron Works passed to his daughter Bertha. Her husband took the name Krupp von Bohlen and Halbach and became head of the firm. "Big Bertha" was originally applied to short, massive mortars of 16.535-inch caliber in allusion to the dumpy figure of Bertha Krupp. Later the term was

transferred to the more spectacular German guns of 1918—the largest guns used in the First World War. The bombardment of Paris began in March, 1918, and lasted 144 days, although actual firing took place on only 44 days. Altogether between 300 and 375 shells were fired at Paris and most of these fell in the city or its suburbs. A total of 256 persons were killed and many others injured. Eighty-eight men, women and children were killed and 68 injured when one of the shells struck the Church of St. Gervais on Good Friday while it was full of worshippers. It is estimated that this long-range bombardment caused a million people to leave Paris. Although all the Big Berthas were dismantled and the authentic drawings of them were destroyed before the Allies entered Germany after the Armistice, there is not so much mystery about their construction as is commonly supposed. The French and British had prepared designs for similar guns before the First World War, but the advantages were not considered sufficient to warrant the great expense of construction. Before the war closed the British, French and Italian governments had started to construct guns of this type. The long range of the Big Berthas depended on the following principle: If a projectile is fired high enough it will travel the greater part of the horizontal distance through the thin upper atmosphere and its range will thus be greatly increased. To accomplish this the Big Berthas were fired at an angle of fifty-five degrees to the horizontal and the shells reached a height of twenty-four or twenty-five miles. It is estimated that they traveled half of the distance through air with a density only one-tenth of that near the surface of the earth. The Big Berthas were fired from points in the forest of Saint-Gobain near Laon in northern France. Although the Allies never found either the guns or the carriages, they found the emplacements and foundations and obtained photographs of the guns themselves. The Big Berthas as originally fired were 126 feet long and weighed 154 tons. They had a caliber of about 8.25 inches. Reports respecting the size and weight of the shells are somewhat conflicting. Most of our information is based on pieces of the shells that fell in Paris. Apparently all those that fell in or near the city exploded and consequently no complete shell was recovered. Their weight has been estimated at from 265 to 330 pounds. They cost about \$8,400 apiece to produce. The best information available, says the United States War Department, indicates that the Big Berthas were of different sizes. Some of them were made by retubing fifteen-inch naval guns, lengthening the bore and reducing the diameter. Owing to the large charge of powder—as much as 660 pounds in some cases—the

Big Berthas eroded rapidly and soon lost their accuracy. To meet this difficulty they were so constructed that when worn too much the inner tube could be rebored to a larger diameter and the guns used again with larger shells. Apparently all the Big Berthas used by the Germans—seven in all—had been rebored once and were in the Krupp factory for a third boring when the Armistice was signed.

What is the queerest family of birds?

The distinction of being the queerest and most unbirdlike of all living birds is generally awarded by naturalists to the family of New Zealand birds known to the Maoris as kiwis. *Kiwi* (pronounced *KEE-wi*) is of imitative origin and is fancied to resemble the cry uttered by this bird. The Maoris sometimes refer to the bird as kiwi-kiwi. Kiwis are near kin to the extinct giant moas and belong to the genus *Apeteryx*, "wingless." These curious creatures, some of which are larger than domestic fowl in size and weight, are covered with reddish-brown or grayish feathers resembling long, loose, coarse hair, and they have no visible wings or tail. Some of the grayish specimens look as if they had been sprinkled with ashes. Their nostrils are at the extreme tip of the long, slightly curved bill, with which the birds feel their way around at night like a blind man with a cane, for they are nocturnal in habit. In fact, the kiwis are so secretive that very few people even in New Zealand have ever seen one. Their favorite diet consists of earthworms, which they detect partly by touch and partly by smell and obtain by probing the soil to a considerable depth. Although kiwis are flightless, they are not entirely wingless as their scientific name suggests. A pair of tiny, undeveloped wings about three inches long are concealed beneath the hairlike plumage. During the day the birds are inactive and spend the time rolled up in a ball or standing with their bills touching the ground as if using them for props. The female, which is much larger than the male, lays one or two eggs in a burrow and the male does most of the incubating. Compared to the size of the birds the eggs are remarkably large. A kiwi egg of the largest species is five inches long and three inches in diameter. It weighs about eight times as much as an ordinary chicken egg and represents about one-fourth of the weight of the bird that lays it. Young kiwis attain a high degree of maturity before being hatched; when they emerge from the eggs they are fully feathered and capable of taking care of themselves without the aid of their parents. The kiwi is popularly regarded as a sort of national emblem of New Zealand, and the florin (two-shilling piece) contains a picture of it.

Steps have been made to save these interesting relics of past ages from imminent extinction, but their preservation is made difficult by the fact that eggs laid in captivity are usually infertile. When an Australian zoo in 1946 offered a New Zealand zoo a live platypus for a kiwi egg the New Zealand government refused to permit the precious egg to be removed from the country.

Is the dolphin a fish or a mammal?

Dolphin is applied to both a fish and a marine mammal. The true dolphin is not a fish but a fishlike, gregarious, aquatic, warm-blooded, air-breathing animal of the whale and porpoise kind, of which it is one of the smallest members, generally being about six or seven feet long. Like the whales and porpoises, it gives birth to living young and nourishes them with milk from its own body. Whales, porpoises and dolphins belong to the order of marine animals known as *Cetacea* and differ from fish in having horizontal instead of vertical tail fins. Dolphins and porpoises are often confused. *Porpoise* is derived through early French *porc poisson* from Latin *porcus*, "swine," and *piscis*, "fish," and literally means "pig fish," referring to the snouts of these animals. In Shakespeare's *Pericles* a fisherman says to the Prince of Tyre: "Nay, master, said not I as much when I saw the porpus how he bounced and tumbled? They say, they're half fish, half flesh." The modern French and German names for the porpoise signify "sea pig." These deep-sea animals are covered with a black substance as thin as tissue paper and have no true skin or hide, the so-called "porpoise leather" used in making shoes being the tanned skin of the white whale. Generally dolphins have long, beaklike snouts, while porpoises have short, rounded muzzles. The "porpoises" often seen performing antics around ships are generally bottle-nosed dolphins. These clowns of the ocean sometimes escort ships for miles and seem to take delight in exhibiting their swimming tricks to sailors and passengers. They are often called "sailors' friends" and are the subject of numerous myths and folk tales. For thirty years a dolphin known as Pelorus Jack, last seen in 1912, regularly swam ahead of ships entering and leaving Pelorus Sound, New Zealand. This "pilot dolphin" was granted protection for its natural life by an order in council. Both dolphins and porpoises are swift and elegant swimmers. They can swim between forty and fifty miles an hour and have been known to keep ahead of some of the fastest vessels. A baby dolphin or porpoise is an expert swimmer from the time of its birth and can keep up with a school of its elders as soon as it is

born. In Greek mythology the dolphin was sacred to Aphrodite, goddess of love and fruitfulness, and in medieval art it was the symbol of social love. In art and literature dolphins are conventionally represented with decidedly curved backs, but actually their backs are as straight as those of related marine animals. Shakespeare alluded to this conception in *Antony and Cleopatra* when he had the Egyptian queen say of "the triple pillar of the world" that "his delights were dolphin-like; they show'd his back above the elements they liv'd in." *Dolphin* is also applied to different species of large, ocean fish belonging to the genus *Coryphaena* and noted for their brilliant and changing colors when out of the water and dying. The boto, found in the Amazon, belongs to this family of dolphin fish. Some of the natives believe that possession by a spinster of a boto makes her irresistible to men regardless of beauty, wealth or social graces.

What causes the holes in Swiss cheese?

The characteristic holes or *eyes* in what is known as Swiss cheese are produced by the liberation of gases generated by bacterial action during the process of fermentation. These eyes or gas holes are sometimes more than half an inch in diameter. When they have glassy interiors and are regularly formed they are supposed to denote Swiss cheese of good quality and flavor. This type of cheese originated in the Swiss Alps and it was formerly believed that the atmosphere and grass in that mountainous region were essential to the development of the eyes. Originally Swiss cheese—that is, cheese with eyes—was curdled with a ferment obtained from the stomachs of calves. Switzerland is famous the world over for her cheese and in normal times the average Switzer eats about eighteen pounds of cheese a year. Of course, all the cheese made in Switzerland is not of the eyed type. Much of it is of other varieties. Years ago the United States Department of Agriculture demonstrated that good cheese of the Swiss type can be produced in America as well as other parts of the world by employing a bacteria starter. Although the organisms that cause the gas holes are fairly well understood by scientists and may be introduced artificially, it is probable that the atmosphere and pasture of the particular region where the cheese is produced have a general influence upon the formation of the eyes. Now millions of pounds of natural cheese of the Swiss type are produced in the United States every year. The quality of American Swiss cheese has been steadily improved by improving the pure bacterial cultures developed in laboratories. For many years the distribution of American-made Swiss cheese was limited because

it was made in large wheels weighing from 175 to 225 pounds. In 1940 a new and convenient method of merchandising American Swiss cheese was developed by the United States Bureau of Dairy Industry. By this method the Swiss cheese is cut into loaves, sliced, wrapped in moisture-proof material and canned at the factory. Genuine Swiss cheese is made of cow's milk, not of goat's milk, as popularly supposed.

Is pure water good to drink?

Absolutely pure water would be injurious to the human body and all other delicate living things. All drinking water contains mineral elements. Whether water is injurious or conducive to health depends on the presence or absence of disease-producing foreign matter or the proportion of minerals. It is impossible to prepare any substance of such purity chemically that it is completely free of all foreign matter whatever. There is no such thing as absolutely pure water. As defined by the Pharmacopoeia, there may be ten parts a million or about one-half grain a gallon of dissolved solids in "distilled water." No animal or vegetable life could exist in such water and a fish would immediately "drown" in it. "Water," wrote Henry Fabre, "is always water, whether it comes from the stagnant pool or the clear stream, from a poisonous liquid or a healing infusion; and it possesses the same properties, when it is rid of its impurities by distillation." Pure water has neither taste nor odor. The taste of drinking water is due to mineral elements and other substances in it.

What is the Caterpillar Club?

Originally the Caterpillar Club was an imaginary organization that airmen were said to join when they saved their lives by jumping from disabled aircraft with parachutes. Life membership became automatic immediately after a successful emergency parachute jump. The name was suggested at Dayton, Ohio, by Verne Timmerman, photographer, Maurice Hutton, aviation editor of the Dayton *Herald*, and Milton H. St. Clair, parachute expert, soon after Lieutenant Harold Harris, army pilot at McCook Field, made what was then regarded as a remarkable escape from a disabled airplane by "bailing out" while in flight. On October 22, 1922, he fell about 2,500 feet before he could locate and pull the release ring that opened the parachute and checked his descent. The three men suggested that the Caterpillar Club be formed to include all persons who made successful parachute landings from disabled aircraft. This name was thought appropriate

for several reasons. The main sails and shroud of a parachute were made of silk. Silkworms spin cocoons around themselves, and after they have developed into moths they crawl out and fly away. Certain kinds of caterpillars drop down from the limbs of trees and other elevated objects on threads of silk spun by themselves. Hence fliers who escape from their machines in parachutes are called caterpillars. The alliteration of the odd name made it popular. As early as 1808 a Polish balloonist named Jordaki Kuperento jumped from a burning balloon and descended to the ground with a parachute. In 1943 St. Clair, one of the original organizers of the mythical club, and several others incorporated the Caterpillar Club in New Jersey and made it a real organization. As late as 1935 the estimated number of men and women eligible to membership in the Caterpillar Club was only 706. By 1943 the number who had "hit the silk" had "jumped" to 10,000, and by 1945 to 40,000.

What mammals lay eggs and suckle their young?

The duck-billed platypus and the echidna, indigenous to Australia, Tasmania and New Guinea, are the only two species of mammals that lay eggs and suckle their young. Scientists refer to these curious types as the lowest form of mammal life, "living fossils," reptiles in the very act of becoming mammals, and survivals of the primitive period when all mammals laid eggs like reptiles. Apparently they survived in Australia and neighboring islands because of the isolation of those regions. Egg-laying mammals are found nowhere else in the world. They are a remnant of the prehistoric Monotremata, the lowest subclass of mammals. *Monotremata* is derived from the Greek *monos*, "one" or "single," and *trema*, "hole." The monotremes were so called because they have a single outlet or vent for all excretory channels of the body. The platypus is one of the strangest of all existing animals. *Platypus* is derived from Greek *platy*, a combining form meaning "broad" or "flat," and *pous*, "foot." This animal combines some of the characteristics of animals, birds, reptiles and fish. It attains a length of twenty inches from the tip of the nose to the tip of the tail and a weight of four pounds, is covered with velvety brown, molelike fur, has webbed feet, a rubbery bill somewhat like a duck's in shape, a flat, clublike tail like a beaver's and beady eyes, but no external ears. When a stuffed specimen was sent to England in 1799 scientists at first supposed it to be an "Oriental hoax." The platypus is semiaquatic in habits and can remain under water from five to ten minutes. There are no true teeth in the adults but teeth

occur in the embryonic stage. The animal's diet consists of worms, grubs, tadpoles, snails, insect larvae, frogs and small crustaceans, which it obtains by nuzzling through the water and mud with its queer bill. Ordinarily the female lays two small eggs which are large-yolked and thin-shelled like those of reptiles and which are incubated in burrows in the banks of streams, the entrances being under water. The young are nourished by a mammary gland which has no nipple and which is enclosed in a shallow pouch developed only during lactation. Apparently the mammary glands of the duckbill are not true teats but merely modified sweat glands. The sounds made by these "water moles" are described as being similar to the "growling cluck" of a hen, the hiss of a gander and the bark of a puppy. Although no known species of mammal is provided with poison fangs, the platypus comes close to being a venomous warm-blooded animal. Each hind heel of the male is equipped with a movable hollow spur that is perforated at the point and connected by means of a minute canal with a large gland located in the back part of the thigh. This mechanism is similar to that of the poison fangs of certain reptiles. To what extent the fluid emitted by these spurs is venomous has never been determined, but persons who have been pricked by them suffered very much as if they had been poisoned locally. Since only the male is armed with these hollow horny projections it seems probable that their chief function is in connection with combats with their kind during the breeding season. Duckbills are delicate creatures and difficult to keep in captivity. One of five that survived the voyage from Australia in 1922 died after being in the New York zoo forty-nine days. A duckbill hatched in the Melbourne zoo in 1943 was the first hatched in captivity. On April 25, 1947, three specimens, a male and two females, after being "conditioned" in the Sir Colin MacKenzie Platypus Sanctuary in Healesville, Australia, were placed in the New York zoo. Equally strange in physique and habit is the echidna, the only other known egg-laying mammal. *Echidna* is a Greek word meaning "adder." In Greek mythology Echidna was a monster, half woman and half serpent, who was the mother of the Sphinx, the Chimeras and other monsters. The echidna is also variously called the spiny, prickly and porcupine anteater because the coarse hair on the upper part of its body is mingled with spines and it feeds chiefly on ants and their eggs. A large tapering snout and an extensile tongue provide the animal with a convenient means of gathering its favorite food. Like the platypus, the echidna is largely nocturnal, but it is larger and hardier and lives in dry country. Varieties of the same

species are found in Australia, Tasmania and New Guinea. One of these animals was kept in the Philadelphia zoo for more than thirty years on a diet of eggs and milk. The hind legs of the echidna turn backward and it has remarkable digging powers. When molested it hisses like a snake and attempts to escape by rolling into a ball or by burrowing rapidly into the sand. It is reputed to be able to travel backward faster than it can forward. The female lays only two tiny eggs a year and they are extruded from the cloaca directly into an abdominal brood pouch into which the mammary glands open.

Does Niagara Falls ever stop falling?

So far as known the flow of water over Niagara Falls has never stopped entirely. The flow of water over the American Falls has been completely stopped several times and reduced to a mere trickle a dozen times or more during the last century, but the flow over the American Falls is only about 5 percent of the total flow of the Niagara River. Lake Erie is the source of the Niagara River, which is less than thirty-five miles long, and the volume of water in the river is sometimes greatly reduced by winds that lower the level of the lake. There is no record that the Canadian or Horseshoe Falls, which are about 155 feet high, have ever frozen over completely so as to stop the flow of water. It seems improbable that such an event would ever occur under present conditions, especially at the center where the water is deep and the current rapid, unless the water were diverted by artificial means. The American Falls, which are about ten feet higher than the Canadian Falls, freeze over more readily because cakes of ice form a jam across the American Channel near the upper end of Goat Island and divert the water into the Canadian Channel. This occasionally so reduces the water that rocks in the river bed are visible and one is able to walk across. Water tumbles over the precipices at the rate of 500,000 tons a minute. The falls have been receding at the rate of about five feet a year and have shifted their position about a quarter of a mile since they were first seen by white men.

How do snakes travel?

"The way of a serpent upon a rock" (Proverbs 30:19) was one of the four things too wonderful for Agur the son of Jakeh to understand. Two general principles are involved in the movement of snakes over a surface. Locomotion in terrestrial snakes is effected for the most part by undulating movements of the body. These undulations are popularly supposed to be vertical and are often so pictured in

conventional representations of snakes in motion. They are, however, always lateral. A series of waves is passed from the front end of the body to the rear and each wave in passing presses against the surrounding medium and forces the snake forward. Small banks of dust pushed up in this manner may be seen where a snake has crossed a dusty road. The undulations are produced by the repeated contraction and expansion of the muscles between the ribs on alternate sides of the body. But snakes do not depend on these undulating movements alone for locomotion. This method is efficient only when the surrounding medium is dense enough to offer resistance to the passage of the undulation. Snakes are provided with an additional mechanism, consisting of transverse scales or shields, overlapping with the free edges pointing backwards, which cover the entire lower surface of their bodies. To each of these platelike scales, called scutes by zoologists, is attached a pair of movable ribs. The scutes slip easily over irregularities on the surface when they are carried forward by the ribs, but they catch on the slightest projection when moved backward. Thus the snake is able to propel itself. Snakes, of course, cannot travel over an absolutely smooth surface, but there are several hundred scutes on the ventral surface of the average snake and each scute is ready to take advantage of even the smallest irregularity or projection. "In gliding," says the United States Department of Agriculture, "the fore part of the snake's body is first advanced; the ventral transverse scales on this part are then partially erected, the weight of this part of the body thrown on these erected transverse scales, and a rather firm hold attained on the surface; the rest of the body is then drawn forward by the contraction of muscles. This process is rapidly repeated, and as the ribs are active agents in this peculiar method of propulsion, snakes are sometimes referred to as *rib-walkers*." In *Strange Animals I Have Known*, Raymond L. Ditmars wrote: "An earthworm moves in quite a different way. By expanding its body it pushes its front end along. Minute hairs then anchor the front end while the back end is drawn forward for another *step*." Snakes seldom continue long in motion and their maximum speed is not so great as is generally supposed. The black mamba (tree cobra) of Africa which is believed to be the fastest-moving snake in the world, probably cannot travel faster than three or four miles an hour. The Western whip snake and the blue racer, among the swiftest snakes in the United States, travel at the rate of only about three miles an hour. In a "rattlesnake derby" at Trinidad, Colorado, in 1939 the winner ran the thirty-foot course in twelve minutes and twelve seconds. Most

snakes do not travel more than a few miles from the place they are born or hatched. While swimming, snakes depend on the undulating movements of the body and on short tail strokes. A rattlesnake holds its rattles above the water when swimming. Undoubtedly all snakes at one time walked on four legs, a scientific fact reflected in the Hebrew tradition of the serpent in the Garden of Eden. In Genesis 3:14 it is related that God condemned the serpent (for putting mischievous ideas into Eve's head) to go upon its belly all the days of its life. Referring to this, Josephus observed: "And when he had deprived him of the use of his feet, he made him to go rolling all along, and dragging himself upon the ground." Some authorities suppose that snakes lost their limbs at a time when they lived in dense vegetation where locomotion by lateral undulations was especially advantageous. All snakes have vestigial internal hind limbs and "hips"; in the pythons and boa constrictors these rudimentary legs project through the skin as a pair of spurs. These "hind legs" are movable, are used to some extent and are capable of inflicting an ugly scratch. "The snake's hips," a slang phrase denoting the height of something or other, has a basis in fact. In a sense snakes may be regarded as lizards that have lost their legs and undergone other modifications. The so-called glass snake, which is so like a snake in outward appearance that it is often mistaken for one but which is classified as a legless lizard and not as a snake, is popularly considered an example of a lizard in the process of becoming a snake. Snake experts, however, tell us that it is not really a connecting link between the true snakes and the true lizards.

How did the Amazon River receive its name?

The Amazon River received its name from a tribe of female warriors reported to live on its banks whom early explorers called Amazons after the fabled nation of female warriors in Scythia and Asia Minor. According to Greek mythology, the Amazons cut or burned off their right breasts to give them greater freedom in bending the bow and in wielding other weapons, and some etymologists derive the name from Greek *a*, "without," and *mazos*, "breast," but the belief that *Amazon* originally signified breastless is only conjectural. An Amazon was not considered an adult until she had killed a man in battle. No man was permitted to enter the state of the Amazons except once a year and then only for propagating the race. All male children were put to death or sent to their fathers. There were also legends of Amazons in Africa and other parts of the world. In 1541

Francisco Orellana and fifty or sixty followers descended the great river of South America from the slopes of the Andes to the Atlantic Ocean. Near the mouth of the Trombetas the explorers had a battle with the natives, and in his memorial to the Spanish king Orellana declared that women armed with bows and arrows fought at the head of the men. Friar Gaspar de Carvajal, a Dominican monk who accompanied the expedition as chronicler, and who was wounded by one of these female warriors, reported that they appeared to be very tall, robust and fair, and that they wore their hair in braids twisted around their heads. Orellana supposed these women belonged to the tribe of female warriors whom he had heard about from his guides, and accordingly he called them Amazons and the region the land of the Amazons. It was not until many years later that the river itself became generally known as the Amazon. Orellana himself first called it Rio de la Trinidad, and many later explorers mentioned it as the Orellana River. Vicente Yáñez Pinzón, who explored its mouth in 1500, had named it Santa Maria de la Mar Dulce, and for a long period afterward it was often referred to simply as *Mar Dulce*, "fresh-water sea." Rio Grande, El Dorado and Marañón are other names by which the river or stretches of it were known, and in Brazil the principal part of the stream is still known as Solimões. Whether there was actually a tribe of female warriors along the river remains a disputed question. No doubt the reports of Orellana and Friar Gaspar about the Amazons had some basis in fact, but the chroniclers may have elaborated upon their meager information to aggrandize themselves and to entertain their sponsors and the public. One investigator suggested that Orellana and his companions may have mistaken young men, with long hair, eardrops and necklaces, for female warriors. Others believe in the historical existence of such a tribe in Brazil. Among the Caribs and other natives of the New World the women often aided the men in battle, and even at the present time there are native tribes in the Amazon Valley whose women are stronger physically and more aggressive than the men. Later romantic writers had a natural tendency to attribute the characteristics and practices of the mythical Amazons of Asia to the female warriors reported by Orellana and Friar Gaspar.

Why can camels travel long distances without water?

Experts say there is a tendency to exaggerate the length of time camels can go without water and food. In the long run a camel requires about as much water and food as a horse does. Like the gemsbok

and certain other antelopes, camels can go almost indefinitely without water if they have green feed and are inactive. As a rule a camel traveling over the desert will not begin to suffer acutely from thirst or hunger until the third or fourth day. Both one-humped Arabian and two-humped Bactrian camels have been known to carry burdens of several hundred pounds for 300 miles without eating or drinking. There are several reasons why camels can go longer without drinking than most other animals. When a camel does drink it drinks vast quantities of water—as much as twelve or fifteen gallons in half an hour. Sometimes camel drivers tie up the heads of their animals and force as much as twenty gallons of water down their throats before setting out on a long journey over the desert. The power of camels to endure thirst is said also to be due partly to the structure of their stomachs. Camels are peculiar among ruminants in having stomachs divided into only three instead of four separate compartments. The fourth compartment is modified into a mere series of folds. The walls of part of the camel's stomach contain muscular pouches, cells, chambers or "bottles" in which water appears to be stored and released when needed. It is believed that as much as a gallon or more of water can be stored in this manner for future use. The camel's capacity for traveling long distances without food or water is also due partly to the fat that is stored up in the hump or humps. When a camel is overtaken by famine the fat in the hump is reabsorbed by the body. The humps increase or diminish materially in size according to the physical condition of the animals. They become small and flaccid after long traveling without water or food. Of course, there is nothing to the notion that camels carry water in their humps. It is said, with how much truth is hard to say, that occasionally, when worst comes to worst, a driver kills his camel and drinks the water stored in the animal's stomach. Rabelais's Pantagruel observed that "the camels and dromedaries of a caravan use to drink for the thirst that's past, for the present and for that to come."

Who said: "Consistency is the hobgoblin of little minds"?

This saying is a distorted version of one of the most widely quoted or misquoted passages written by Ralph Waldo Emerson. What the Concord philosopher actually wrote was: "A foolish consistency is the hobgoblin of little minds, adored by little statesmen and philosophers and divines. With consistency a great soul has simply nothing to do." It occurs in *Self-Reliance*, one of the essays in a volume first published in 1841. In the United States Senate July 25, 1846, Daniel

Webster said: "Inconsistencies of opinion, arising from changes of circumstances, are often justifiable." "Nothing that is not a real crime," wrote Joseph Addison in the *Spectator* (September 5, 1711), "makes a man appear so contemptible and little in the eyes of the world as inconsistency, especially when it regards religion or party." Another famous saying on this subject is, "Consistency, thou art a jewel." It has not been traced back farther than the middle of the nineteenth century and nobody seems to know how or when it originated. Shakespeare and other Elizabethan writers compared many cardinal virtues—good name, chastity, discretion—to a jewel.

Why are leases made for 99 years?

The custom of making leases for 99 years is a relic of the English feudal system. Long-term leases used to be, and occasionally still are, made for 999 years. This practice came to America with the early colonists as part of the common law. About 1688 William Rittenhouse, a Mennonite minister, and three others signed a 999-year lease on twenty acres near Germantown in Pennsylvania on which to build the first paper mill in America. In 1784 General Washington gave certain squatters in the Ohio country the alternative of buying the land outright or becoming "Tenants upon leases of 999 years, at the annual Rent of Ten pounds pr. Ct. pr. Ann." Apparently at one time long-term leases were made for 1,000 years. In Shakespeare's *II Henry VI* Jack Cade in Iden's Garden, says, "Now I am so hungry, that if I might have a lease of my life for a thousand years I could stay no longer." Sir Edward Coke, writing in Queen Elizabeth's reign, observed that a lease for a thousand years might on its face suggest fraud. Some legal authorities suppose there was an old English law or custom that prohibited the leasing of real estate for 1,000 years or more. If land was leased for a term of 1,000 years or more the title passed and the courts regarded the transaction as a sale. To evade this law or custom, land-owners leased their property for 999 years—one year less than the prohibited period. But it has never been established that there ever was such a law or custom. Other authorities suggest that 999 may have been chosen because of some mystic meaning connected with the number 9. Whatever the original reason, in the course of time it became customary to make long-term leases for 99 instead of 999 years. Various reasons have been given for the adoption of 99 instead of 100 for the period of the shorter leases. In 1839 John Bouvier published his *Law Dictionary*, the first work of its kind written by an American. Ignoring the earlier 999-year leases, Bouvier wrote: "The limit of 99

years would seem to be connected with a somewhat arbitrary estimate of 100 years as the probable extreme duration of life of man. Leases for years are in their attributes, evolution and history, a sort of middle term between estates-for-life and a tenant-at-will. For this reason a period little short of the duration of the life of man was devised so that the lessee might reasonably build or lay out money on the property." Another authority supposes that leases were written for 99 years to cover three generations. Still another thinks leases were made for 99 years to avoid the larger stamp duty on leases for over 100 years and that they were made for one year less to prevent quibbling over whether 100 is "over 100." It appears more probable that 99 was chosen in this connection merely by analogy with the early 999. At any rate, 99-year leases continued to be made after the reason for them was forgotten. In Massachusetts a ground lease for 100 years or more may be dealt with as a fee simple, provided 50 years of the term has expired. Such leases have become an important factor in the development of real estate in large cities. It is only custom that retains the exact number 99. If the parties of a long-term lease wish, there is no reason in most cases why the lease cannot be written for a longer or a shorter period. A term of 99 years has the advantage of being technically definite and still indefinite for all practical purposes. Frequently such leases stipulate that the lessee shall have the right to purchase the property or to renew the lease forever at the end of the initial term of 99 years. The United States government still makes 99-year leases with states for the development of federal lands for forestry, recreation and wild-life purposes.

Why do some countries hold elections on Sunday?

Many countries hold their national elections on Sunday. This practice is prompted by considerations of convenience and industrial economy. It enables the largest number of voters to take part in the elections and causes the least interference with business. The attitude toward Sunday differs somewhat in Catholic and Protestant countries. The Roman Catholic and the Eastern Orthodox churches generally regard Sunday as one of the holidays of the church and they tolerate, if they do not encourage, the people to engage in pastimes and recreations on that day after church services. That was also the attitude of the Protestants in England until after the rise of the Puritans, who identified Sunday with the Biblical Sabbath and enjoined strict religious observance of the day. In the United States, where the prevailing attitude toward Sunday as the Sabbath was influenced by Puritan

thought and practice, neither national nor local elections have ever been held on Sunday. It is even regarded as bad taste for candidates to campaign openly on that day. In Germany this feeling about Sunday has not been so strong as in most English-speaking countries. The Weimar Constitution of the German Republic required all national elections to be held on Sundays or public holidays. Provincial and local elections were often held on public holidays and Sundays even under the imperial regime. Sunday elections are unknown throughout the British Empire. Poland, Bulgaria, Greece, France and several other European countries hold elections on Sunday. After the First World War Rumania, Greece, Czechoslovakia, Yugoslavia, Austria and Hungary signed "minorities" treaties in which they agreed not to compel Jews to do any act in violation of their Sabbath—and not to hold elections on Saturday. In Latin America, Sunday is largely a day of relaxation and enjoyment rather than a day devoted entirely to religious observance, and Mexico, Nicaragua, Brazil, Argentina, Peru and several other countries regularly hold their national elections on Sunday. The Mexican Constitution of 1824 declared that "In every state and territory of the federation, the appointment of Representatives shall be made on the first Sunday in October previous to its renovation."

Was any species of deer indigenous to Australia?

Neither Australia nor New Zealand was the habitat of any representative of the deer family when Europeans first visited the region. Nearly all the land mammals of that region of queer and curious creatures are marsupials, most of which are distinguished by their method of carrying their young about with them in a pouch on the abdomen. Even the cat family is not represented among the indigenous mammals of Australia and New Zealand. In 1862 three European red deer—a buck and two does—were introduced into the North Island of New Zealand and they became the progenitors of a large deer population. This species thrives in New Zealand and the individuals attain a larger size there than they do in their native land. Deer were introduced later into Australia and gradually established themselves in many parts of that island-continent. In 1941 a report from Australia said that herds of deer, ranging in number from 50 to 100, were doing considerable damage to field crops near Warwick in Queensland. The Strait of Lombok, which separates the islands of Bali and Lombok lying east of Java, is known to scientists as "Wallace's line," because the British naturalist Alfred Wallace found it to be the dividing line between

Asiatic and Australian faunas in the Malay Archipelago. No deer is native to Africa. On that continent the antelope takes the place of the deer.

Why is salted beef called corned beef?

Corned in *corned beef* comes from an old verb *to corn*, which meant to season or cure by sprinkling with salt, to salt slightly in brine, as to corn beef or other meat. This verb, in turn, is derived from an old English noun *corn*, which meant a small, hard particle of any substance, such as sand, gunpowder, grain or seed. It is the Teutonic equivalent of *grain* and some authorities suggest that the two words may be derived from a common root, akin to the verb *grow* and originally signifying "seed." Jesus is quoted in John 12:24 as saying: "Verily, verily, I say unto you, Except a corn of wheat fall into the ground and die, it abideth alone: but if it die, it bringeth forth much fruit." *Barleycorn* and *peppercorn* are survivals of the same usage. Corned beef was so called because it was originally prepared with coarse grains of salt—salt corns. *Kernel* is merely a modification of *cornel*, "little corn," and at one time *kernel of corn* was pleonastic, because literally it meant "a little corn of corn." There appears to be no foundation for the notion that corned beef was so called because it was a favorite dish among the Cornish people.

Do all brown weasels turn white in winter?

There are several species of weasels in the Northern Hemisphere and whether their coats turn white during the winter appears to depend on the latitude and the altitude of their habitat and perhaps other factors. Generally speaking, weasels in Canada and in the extreme northern part of the United States have a white winter coat at all altitudes. Such seems to be the case also with weasels in the higher sections of the Appalachian, Rocky Mountain, Sierra Nevada and Cascade systems. There is a zone passing roughly through middle New England, New York, Pennsylvania, Ohio, Indiana, Illinois, Iowa and South Dakota in which some individual weasels turn white in winter while others of the same species do not. A similar variation in winter coat correlated with altitude is found in parts of Oregon, Washington and Idaho. North of the transition zone all weasels of all species have a white coat in winter, and farther south, barring a few regions of high altitude, all individuals of all species remain brown throughout the year. The fur of most species of brown weasels is not entirely brown in the summer. It is reddish brown above, but sulphur white

below. Weasels in their white winter coats are popularly called ermines and their furs are sold as such on the market. Fur buyers quote prices during the winter for both ermine and brown weasel pelts. The original and true ermine is the white winter coat of a large weasel common in Europe and Asia. In the British Isles the same animal in its brown summer coat is known as the stoat. An interesting thing about the brown weasel is the fact that when it alters color in the winter the entire coat turns snowy white except the tip of the tail, which remains jet black at all seasons of the year. Sometimes ermine robes and coats are so made that the tail tips show as black spots. It has been suggested that the black tail tip plays a part in the scheme of "protective coloration." The white coat makes the animal inconspicuous against a snow background, but if a hawk, owl or other enemy tried to pounce upon a weasel it would see and strike at the black tip of the tail and permit the animal to dart away. Naturalists are not agreed as to the cause of the change in color of the weasel. Some suppose that the color of the fur is affected by temperature, the presence or absence of snow and the degree of light. The quickness of the change in color has led some to suppose that the individual hairs change color regardless of shedding. It seems more probable that in the late fall in northern latitudes the brown coat is shed very rapidly and replaced by a much longer and denser white one and that in the spring the coat is shed again and the colors reversed. The "varying hare" and some other animals undergo a similar summer and winter change in color. Thomas Hume Bissonnette, American biologist and investigator of photoperiodism in animals and plants, concluded that the summer and winter changes in the coats of animals are determined by the length of the day and not by cold and warmth or by change in the color of their surroundings. By applying a light treatment he was able to make weasels turn white in the spring instead of the fall and to shed from white to white and from brown to brown at will. Ermine became known as the "royal fur" because its beauty and costliness led sovereigns to wear robes and garments made of it. King Edward III of England in the fourteenth century went so far as to issue a decree restricting the use of ermine to persons of royal birth and making it a punishable offense for anybody else to wear it. Later the state robes of peers, as well as the official robes of judges, were made of the white fur of the weasel. In literature the whiteness of ermine is often referred to as an emblem of purity. Ermine is not expensive because weasels are particularly rare but because they are agile, furtive, keen-witted, nocturnal in habit and hard to catch.

Mustela zibellina, another Old World member of the weasel family, produces the highly prized fur known as sable. This animal, which so much resembles the pine marten that some naturalists regard it as a local variety of the same species, has been hunted and trapped so incessantly for its rich, deep-brown winter coat that it is virtually extinct except in eastern Siberia. The common weasel is reputed to be the only mammal that kills for the sheer thrill of killing. It is one of the most efficient killing organisms in all nature. Swift, keen of sight, hearing and scent, vicious, aggressive, bloodthirsty, it often paralyzes its prey with fear. Weasels are so alert that "to catch a weasel asleep" is proverbial in the sense of to find a vigilant person off his guard. The apocryphal Epistle of Barnabas records the curious belief that the weasel conceives through its mouth.

Where is the Swanee River?

The name of no American river is spelled *Swanee*. The Suwannee River, made famous by Stephen C. Foster's song entitled *Swanee River (Old Folks at Home)*, has its source in southern Georgia in the region of Okefenokee Swamp. It flows through part of Florida and discharges its waters into the Gulf of Mexico. In its fifth report (1911) the United States Geographic Board asserted that *Suwannee*, not *Swanee*, is the correct spelling of this word when it refers to the river and the county and village in Florida, although *Suwanee*, with one *n*, is correct when it refers to a village in Georgia, and the name of a town in Tennessee is spelled *Sewanee*. There are several theories as to the origin of the term. One derives it from *Suwa'ni*, a Creek Indian word of uncertain meaning but supposed by some to signify "echo." Another derives it from *San Juanito*, "Little St. John," the name of the Florida river that occurs on some early Spanish maps. Still another, generally rejected by Indian language experts, derives it from *Shawnee*, the name of an Algonquian Indian racial and linguistic stock, bands of which at one time may have lived in that region. *Savannah*, the name of a river and city in Georgia, is believed by some to be derived from *Shawnee*. In 1763 *Suwannee* was the name of an Indian village situated on the right bank of the Suwannee River in Lafayette County, Florida. This village was destroyed during the Seminole War of 1818 and the site is now occupied by Old Town, which was called Old Suwany Town in a report to the secretary of war in 1822. Stephen C. Foster (1826-1864) never saw the Suwannee River. When he wrote the song at Pittsburgh in 1851 he had never heard of a river by that name. *Pedee* was the name of the river used in the first draft of the

song. Foster didn't like it and asked his brother Morrison to suggest a euphonious, two-syllable name of a southern stream. *Yazoo* was the first one suggested, but the song writer said it had already been used. While examining an atlas the brother accidentally came across *Suwannee*, and that name in the form of *Swanee* was adopted. Thus a small and unknown stream was made famous throughout the world. Although the song is widely known as *Swanee River*, Foster always regarded *Old Folks at Home* as the title. The first stanza reads:

Way down upon de Swanee Ribber,
Far, far away.
Dere's wha my heart is turning ebber,
Dere's wha de old folks stay.
All up and down de whole creation,
Sadly I roam,
Still longing for de old plantation
And for de old folks at home.

Is the penalty greater for hitting one wearing glasses?

This writer has been unable to find any laws in the United States that specifically provide greater penalties for committing assault and battery by striking a person wearing glasses than striking one not wearing glasses. A person wearing glasses would be much more likely to be injured by a blow in the face than one not wearing glasses, and consequently striking a person who has spectacles on might be taking unfair advantage of him. In all probability a court would take this fact into consideration in passing judgment upon a person convicted of assault and battery by striking another in the face. In other words, striking one who has glasses on might be regarded as an aggravation of the offense. Hitting another who is wearing glasses has come to symbolize a cowardly and contemptible act.

Why was the fasces placed on the dime?

For many years the United States Treasury Department has received demands that the government "stop minting the emblem of fascism on American dimes." At one time many people had a vague notion that the Fascists of Italy were attempting to spread propaganda by means of the symbols on the United States ten-cent piece. Of course, the notion was absurd. The fasces design was adopted while Benito Mussolini was fighting in the Italian army on the side of the Allies during the First World War and long before he conceived the Fascist movement in Italy. In 1916 the United States dime bearing the head

of Mercury on one side and the Roman fasces on the other was substituted for the former Liberty-head dime. This coin was designed by Adolph Alexander Weinman, a native of Germany and a member of the United States Commission of Fine Arts, who also designed the fifty-cent piece first issued in the same year. The emblems on the ten-cent piece in question are such as are commonly placed on coins and works of art. In Roman mythology, Mercury was the god of commerce and the messenger and herald of the other gods, corresponding to Hermes in Greek mythology. In Latin *fascia* signifies "something that binds," and *fascis* a "bundle." *Fasces*, the plural form, was applied to a bundle of rods enclosing a protruding ax. This emblem was carried by ancient Roman lictors before the magistrates as a symbol of office and authority. It originally symbolized the fact that the lictors had the authority to punish by flogging with the rods and beheading with the ax. A similar symbol, constituting part of the mace, is used by the sergeant at arms of the United States House of Representatives to restore order. This idea was borrowed from the British House of Commons. *Fascine*, a military term applied to a long bundle of sticks bound together and used in raising batteries, filling ditches and trenches and making parapets, is from the same source. In 1919, three years after the United States ten-cent piece bearing the fasces was first issued, Mussolini and his blackshirted followers met at Milan in Italy and adopted the fasces as the emblem of their organization. In Italian *fascis* became *fascio*, and the blackshirts called their party *Fascimo* (*fah-SHEE-moe*), the plural of which is *Fascisti* (*fah-SHEES-tee*). In English the Italian words became simply *Fascism*, *Fascist* and *Fascists*. They are generally pronounced *FASH-izm*, *FASH-ist* and *FASH-ists*. Although *fascimo* in Italy was destroyed as an organization and system of government, *fascism* and *fascist* survive in English in the senses of totalitarianism and one who believes in or advocates such a system. After having been coined for twenty-nine years the dime bearing the head of Mercury and the fasces emblem was discontinued in 1946 and supplanted by the Franklin D. Roosevelt dime, which retained the fasces design on the reverse side.

Why is the English walnut so called?

What is called the English walnut in America is called simply the walnut in England. This species (*Juglans regia*) was not native to the British Isles but was indigenous to the Balkans, Asia Minor, Persia and the region eastward to China and the northwestern Himalayas. The American name arose from the fact that this nut was first intro-

duced into the United States from England by the early colonists. Other popular names for the species are *Jove's nut*, *royal nut*, *Circasian nut*, *French nut* and *Madeira nut*. Some authorities believe it was introduced into the British Isles by the Romans and that its cultivation there dates back to the Roman occupation. It is known to have been grown in England as early as 1562. The first element in *walnut* is derived from the Old Teutonic root *wahl*, "strange," or "foreign," whence also come *Welsh*, and *Wlach*. The English called it *walnut*, "foreign nut," because it was introduced from abroad. Hence *English walnut* involves an etymological contradiction because the literal meaning of the name brands it as non-English. The family of true walnuts contains about ten species, three of which are native to the United States, namely, black walnut, *Juglans nigra*; California black walnut, *Juglans californica*; and white walnut (butternut), *Juglans cinerea*. English walnuts are rich in both proteins and fats, contain some minerals and vitamins and constitute one of nature's most concentrated foods. The leaves and the husks of the nuts are resinous and astringent and are sometimes used medicinally as well as for dyeing. Europeans make walnut sugar very much as Americans make maple sugar. The fine, hard wood of the walnut, especially the American black walnut, is prized as a material for gunstocks, furniture, cabinets and musical instruments.

Why is *q* always followed by *u*?

This is a holdover from ancient times. We borrowed it from the Latin along with most of the letters of our alphabet. *Q* in English is always pronounced *k* and in regularly formed words it is never used except when followed by *u*, plus another vowel, the combination *qu* being virtually a single letter. Accordingly *q* is a supernumerary letter and could be eliminated without any loss whatever to the English language. It corresponds to kappa in the most ancient Greek alphabets. Apparently it was borrowed from the Phoenicians, who in turn got it from the Egyptians. We find it only in the earliest Greek inscriptions. Being always pronounced the same as kappa or *k* it disappeared from most of the dialects at an early date and was retained only in the Ionic alphabet where it degenerated into a mere numerical symbol for 90. As a regular letter it survived longest when followed by omicron or upsilon, as at the beginning of the place name *Corinth*. Thus it is seen that even in the time of the earliest Greeks there was already a tendency to use *q* only when combined with *u*. In Latin *q* was regularly used in combination with *u* or *v* (originally the same letter)

to represent the sound *kw*. The Normans were responsible for introducing *qu* into English, for *q* did not occur in Anglo-Saxon, the sound of *qu* being represented by *cw* or *cu*. Most of the English words containing *qu* are of Latin or French origin, although in some cases the combination was substituted for *cw* in Saxon words. So, it seems, we have *q* as a superfluous letter in English simply because it existed in the Phoenician and Egyptian alphabets with a real function. *Q* is used without *u* only in the case of a few foreign names and terms, as, *Qadirlyah*, a member of a Moslem ascetic order. *Iraq*, an Arab country in Asia, and *Qaisar-i-Hind*, "Caesar of India," formerly the official title of the British sovereign as ruler of that country. Scholars sometimes use *q* without *u* to transliterate the Hebrew *koph* in such words as *Qabbala* for *Cabbala*.

Why do coins have milled edges?

The original purpose of *milling* money, stamping coins with raised borders and fluted, grooved or "reeded" edges, was to prevent the fraudulent removal of metal and to protect coins from wear. A machine for milling coins was first invented in the sixteenth century by a Frenchman named Antoine Boucher. The English government struck off milled coins in 1553. Such coins were issued again from 1562 to 1572, when the practice was discontinued until 1623. It did not become a regular practice to mill coins in England until about 1662. Milled sixpence pieces were so rare in Elizabeth's time that they sold at a premium. In Shakespeare's *The Merry Wives of Windsor* (1599) Master Slender says Pistol picked his purse "of seven groats in mill-sixpences, and two Edward shovel-boards, that cost me two shillings and two pence a-piece of Yeard Miller." These rare coins were sometimes used as "counters." In *News from Plymouth* (1668) Sir William Davenant, reputed son of Shakespeare, wrote: "A few milled sixpences with which my purser keeps account." Formerly crooks practiced "clipping"; that is, they filed off a little metal from each gold or silver coin that passed through their hands. Shakespeare alludes also to this practice. In *King Henry V* the king, on the eve of the Battle of Agincourt, says: "Indeed, the French may lay twenty French crowns to one, they will beat us; for they bear them on their shoulders; but it is no English treason to cut French crowns, and to-morrow the king himself will be a clipper." In 1708 Maryland prescribed penalties for cutting and clipping coins. At that time it was a common practice to cut large silver coins into quarters and to use the pieces for change. These pieces were called "sharp-change" because of the sharp points and edges of

the pieces. Even as late as the administration of George Washington it was a common practice to file, shear and clip the English, Spanish and French coins in circulation in the United States. Sometimes coins would lose as much as a quarter of their weight within a few months after being put into circulation. In those days gold coins were weighed each time they passed through a bank or money-changer and valued according to the exact amount of gold they contained. Milled coins cannot be filed or clipped without the loss of metal being noticeable. All coins minted by the United States are milled on the face, but only gold and silver coins are made with reeded edges. Milling coins, besides protecting them from wear and clipping, also aids in distinguishing them by touch and to some extent facilitates stacking and handling them. The rubbing together of coins results in the annual loss of many tons of gold and silver throughout the world.

Do snakes swallow their young?

It is a common belief that young snakes often run down the mother's throat for temporary protection. Many persons bear witness in all sincerity that they have seen little snakes taking refuge in the mouth of the mother. Naturalists do not credit these reports. They believe the stories arise either from the fact that certain species of snakes often prey upon other snakes or the fact that well-developed young snakes are often found in the bodies of female snakes that have been killed. The fact is not generally appreciated that many species of snakes are viviparous; that is, they do not lay eggs but produce living young, which are active and able to look out for themselves from the moment of birth. The general notion that all snakes lay eggs leads to many misconceptions about snakes. For instance, one often hears reports of finding rattlesnake eggs, but rattlesnakes do not lay eggs. Such reports are based on mistaken identity, because all of the dozen or more species of rattlesnakes in North America are viviparous and their eggs hatch inside and not outside the mother's body. In the fall of the year the female rattler usually gives birth to from six to nine young, which are several inches long. They immediately exhibit all the traits of the adult rattler and are dangerous from the moment of birth. Likewise, all the numerous species of common garter snakes, which received their name from the fancied resemblance of their striped bodies to a garter, do not lay eggs but give birth to living young. The number of young in a single brood may range from a dozen to fifty. Stories of snakes swallowing their young are believed to arise from examining the bodies of freshly killed female viviparous

snakes about to produce a litter of young. Sometimes the young crawl from the mutilated body of the parent and the slayer jumps at the conclusion that the snake has previously swallowed her brood. The same mistake might arise from seeing a cannibal species making a meal of the young of another species. It is doubtful whether either the mother or the father snake of most species takes any interest whatever in the offspring. Apparently young snakes, whether born or hatched from eggs, must shift for themselves from the beginning. What newly born and newly hatched snakes in the wild state feed upon is not clearly understood. Pythons are among the few egg-laying snakes that cover their eggs to protect and to incubate them. The anatomical structure of a snake's mouth and throat argue strongly against the belief that young snakes take refuge in the mother's body and later emerge unharmed.

Is any species of snake slimy?

Contrary to popular belief, no species of snake is slimy, not even those that live chiefly in the water. *Slimy* signifies "viscous" or "glutinous" and the term correctly describes the exterior of many worms, snails and other creatures, but it does not properly describe the skin of any serpent in its natural condition. Certain amphibians possess glands that keep the skin moist and slimy, but the skin of a snake is normally clean and dry and not slimy and repellent. As one writer puts it, a snake may be cold to the touch, but its skin is as clean and free from slime as a watch chain.

What does the Turkish title *ghazi* mean?

The Great National Assembly at Ankara conferred the title *ghazi* (pronounced *GAH-see*) on Mustafa Kemal Pasha in 1921 after he had defeated the Greeks in a pitched battle that lasted twenty days. *Ghazi* is an Arabic word literally meaning "warrior" but generally translated by the Turks as "the victorious" or "the conqueror." Among the Arabs the term was applied to fanatical champions of Islam, particularly to those who pledged themselves to exterminate unbelievers by the sword. Even at the present time many of the Durani Afghans of the Kandahar and Zamindanaw districts consecrate their lives to the destruction of non-Moslems and are known as *ghazis*. The Turks borrowed the title and bestowed it as a mark of honor upon eminent military commanders who had fought for Islam. In the latter days of the Ottoman Empire the title implied about the same as field marshal did in France and Great Britain. The first president of the Republic

of Turkey had had half a dozen names when he died in 1938. He was born in Salonika in European Turkey in 1881 and was at first known simply as Mustafa. When he was in military preparatory school his mathematics instructor added to his name *Kemal*, "rightness." After he became important as a soldier and civil leader the title *pasha*, equivalent to "lord" or "duke," was conferred on him. Most of his historic record was made under the name and title Mustafa Kemal Pasha. In 1934 when the Ghazi decreed that all Turks must have family names he himself chose *Atatürk*, literally "chief Turk" and figuratively "father of the Turks." After that he was known as Kemal Atatürk.

Why was Sir Walter Raleigh executed?

Technically Sir Walter Raleigh was executed for treason; actually he was executed for shedding Spanish blood and encroaching upon Spanish territory after engaging not to do so. King James I, who succeeded Elizabeth on the throne in 1603, and Raleigh disliked each other intensely. The former favored a policy of peace. The latter wanted war with Spain. Raleigh, after having been deprived of many of his titles and offices, criticized the king severely. On one occasion he asserted, it was reported, that a war with Spain would have been preferable to James's ascension to the throne. However that may be, Raleigh was charged with being implicated in a series of conspiracies against the king during the last days of the reign of Elizabeth and during the first few months of that of James, and the one-time favorite of Queen Elizabeth was committed to London Tower July 19, 1603. More specifically he was charged with high treason for trying to fix the succession upon Arabella Stuart instead of James VI of Scotland and for trying to reintroduce the Roman Catholic faith in place of "the Gospel authorized." The first charge was probably false and the second was absurd. His trial, held at Winchester, was conducted with brutality and manifest unfairness on the part of the attorney general, Sir Edward Coke. On November 17, 1603, Coke, turning to the accused, shouted: "I will prove you the notoriousest traitor that ever came to the bar. . . . Nay, I will prove all; thou art a monster: thou hast an English face, but a Spanish heart." Raleigh defended himself courageously and ably, but he had no chance in a court completely subservient to the king. Although he may have known of the conspiracies, no evidence of his guilt was produced. Nevertheless he was convicted of treason and sentenced to death. The execution, however, did not take place then. Instead Raleigh was confined in the Tower, where he

remained until 1616 and where he whiled away the tedium of imprisonment by making chemical experiments and writing his *History of the World*. He finally obtained his release by promising the king that he could find a gold mine on the northern coast of South America without encroaching on any of the possessions of Spain. The Spanish ambassador informed the king that Raleigh's promise was impossible of fulfillment, because Spain already had settlements on the coast. James told the ambassador that if Raleigh failed to keep his promise he would have him executed on his old sentence for treason. Accordingly the prisoner was released without pardon, which left him at the king's mercy. The expedition sailed from England in March, 1617, and reached the mouth of the Orinoco in the following December. Raleigh himself became ill with fever and remained in Trinidad while five small vessels were sent up the river to locate the alleged gold mine. On the way the English found a Spanish settlement and a skirmish took place in which Raleigh's son Walter and several Spaniards were slain. As was expected, the expedition failed and was compelled to return to England with the commander's promise broken. Raleigh was arrested, thrown into the Tower, resented on the old verdict, and on October 29, 1618, was beheaded on the sentence passed more than fifteen years before. His body was buried in St. Margaret's Church, London. The head was embalmed and kept in a leather bag by his widow as long as she lived. What became of it after it was inherited by her son is not known.

How did *feather in the cap* originate?

Feather in the cap has two opposite meanings. It may signify a mere trifle or a worth-while achievement. The custom of wearing feathers in the headgear for ornament is very old. Primitive man probably wore feathers on his head before he wore clothes on his body. Hence the custom became associated with vanity. "That feather in their caps" occurs in Peter A. Motteux's English translation of Cervantes' *Don Quixote* (1718), and in Shakespeare's *The Taming of the Shrew*, Biondello, describing the outlandish costume worn by Petruchio at his wedding, says he had "an old hat, and the humor of forty fancies' pricked in't for a feather." When Parliament in 1657 offered Oliver Cromwell the title of king, the Protector is reputed to have said: "Royalty is but a feather in a man's cap; let children enjoy their rattles." But when a person does something creditable or gains a well-deserved honor it is said to be "a feather in his cap." In this sense the phrase alludes to the custom of certain peoples, such as the

ancient Lycians in Asia Minor, among whom a feather was added to the headgear of a warrior every time he slew an enemy. *A Description of Hungary* (1599), a manuscript copy of which is preserved in the British Museum, wrote: "It hath been an ancient custom among them that none should wear a feather but he who had killed a Turk, to whom only it was lawful to show the number of his slain enemies by the number of feathers in his cap." Among the American Indians of the Great Plains feathers worn in the hair indicated rank by their kind, number and manner of mounting, and in some cases the feathers represented the number of enemies the individual had slain. "It was the custom of the Pillager Chippewa," says the United States Bureau of American Ethnology, "to allow a warrior who scalped an enemy to wear on his head two eagle feathers, and the act of capturing a wounded prisoner on the battlefield earned the distinction of wearing five." Even today some Kanakil warriors in Ethiopia wear a feather in their hair to show that they have killed a man within a year. In 1754 Governor Robert Dinwiddie of Virginia wrote to Colonel George Washington on the western frontier that the royal lieutenants were to rank with the Virginia captains, but this, explained the governor, "is only Feathers in their Caps to prevent any ill Blood in regard to rank." In 1939 the Washington Community Chest presented a small red feather from a tropical bird to its campaign workers and to all contributors to wear in their hats. Bird lovers protested so vigorously that the next year the organization switched to feathers from ordinary barnyard fowls.

Why are former soldiers called buddies?

In its original sense *buddy* meant "full of buds" or "like a bud." It was so used as early as 1598. Through a perfectly natural application it then became, particularly in Scottish and English dialect, a term of affection and endearment for a little child or "a budding youngster." Not until the eighteenth century was it dignified by the meaning of "chum," "companion in arms," "intimate friend," "fellow worker," "mate" or "partner." Before the outbreak of the First World War a person with whom another chummed was called his buddy. The term became so common in this sense among the soldiers in that war that it gradually came to be applied to former soldiers in general. A "buddy poppy" is an artificial flower sold for the benefit of veterans. Since the term occurs in northern England and in Scotland as *butty*, some authorities suppose it to be related to Middle English *butty*, perhaps derived from French *butin*, which was used like *booty* to designate

one who shares booty or spoil with others. There is little reason for accepting the theory that *buddy* was a corruption of *brother* and originated as the result of the difficulty that small children have in pronouncing that word.

How did graham bread get its name?

Graham bread received its name from Sylvester Graham (1794-1851), an American lecturer on temperance and food reform. He was born at Suffield, Connecticut, and studied at Amherst for a time before he entered the Presbyterian ministry in 1826. He maintained that a vegetable diet was incompatible with a desire for stimulants, and as part of his temperance and food campaign he not only advocated total abstinence from meat but also recommended the eating of bread made of unsifted or unbolted wheat flour, that is, flour in which all the wheat kernel except the husk is used. In *A Defence of the Graham System of Living* (1835) Graham wrote:

Of wheat bread, there are three varieties; in the first, *all* the bran is separated; in the second, only the coarse, and, in the third, *none* at all. The bread made of flour from which all the bran has been separated is the most commonly used, but bread made of flour from which none of the bran has been separated is the most wholesome. Bran operates as a stimulus to the intestinal canal, by increasing its peristaltic or worm-like motion, and, for this reason, always keeps the bowels open, thus obviating the tendency to costiveness produced by the use of bread made from superfine flour. The mucilage it contains also soothes the bowels, preventing any irritation that might result from the particles or scales of bran. To those who adopt the vegetable regimen, it would be well to say, that the neglect of the Brown Bread, as an accompanying article at their meals, is a breach of the fundamental principles upon which the system is founded.

Graham is often referred to as the "inventor" or "introducer" of graham bread. He was neither, for whole-wheat bread was the first wheat bread made. Graham's name became associated with it because he included the article in his dietary regimen, which at one time had many thousands of adherents throughout the United States. In 1831 Graham went to New York as a lecturer and opened a "Graham boarding-house." Among his boarders was Horace Greeley, who was a vegetarian. The system was called Grahamism and its adherents Grahamites. The United States Department of Agriculture says that graham, whole-wheat or entire-wheat, bread "is the clean, sound product made by grinding wheat, and contains, in their natural proportions, all of the constituents of the cleaned grain." Many people,

however, apply *graham* specifically to the 100-percent article, while they restrict *whole-wheat* and *entire-wheat* to flour from which part of the coarse bran has been removed. This accounts for the rather common impression that graham bread is darker than whole-wheat or entire-wheat bread.

Can stamps printed on envelopes be used elsewhere?

United States postage stamps cut from embossed stamped envelopes or postal cards are not valid when attached to other mail matter. Many people think that if they mutilate a government stamped envelope or spoil it in addressing they can cut the stamp from the original envelope and use it in prepayment of postage on a plain envelope. This practice is forbidden by the postal regulations. The United States Postal Laws and Regulations provide: "Mutilated or defaced postage stamps, fractional parts of stamps, postage-due stamps, stamps cut from embossed stamped envelopes, newspaper wrappers, or postal cards, or stamps other than postage stamps, may not be used or counted in prepayment of postage." However, stamped envelopes spoiled in addressing are redeemable at postage value if presented at a post office in a substantially whole condition. Unmutilated postal cards with stamps embossed on them are redeemable at 75 percent of their face value. But stamped government envelopes and postal cards bearing printed addresses are redeemable by original purchasers only.

Did Diogenes actually live in a tub?

The story that the Greek Cynic philosopher Diogenes lived in a tub is probably a myth. It has been traced back no farther than the time of the Roman Stoic philosopher and author Seneca (12 B.C.-65 A.D.), who wrote of the Greek that "A man so crabbed ought to have lived in a tub like a dog." Later writers carelessly quoted Seneca as having said that Diogenes lived in a tub and that may be all there is to the popular story. Diogenes Laertius, who compiled an interesting but rather inaccurate life of Diogenes about the third century A.D., wrote of the famous Cynic: "Having written to one to provide him a cottage, and delaying, he made use of a tub he found in the Metroun (temple), instead of a house, as even himself relates to us in his letters." "He was very much beloved of the Athenians," added Diogenes Laertius, "and therefore when a young fellow had broken his tub they ordered him to be beaten and gave him another tub." The tub story is characteristic of Diogenes and may have had a basis in fact. He was born in Sinope, a city of Pontus in Asia Minor, and when quite young went to

Athens with his father after they had been banished from their native place. At the Greek center of learning the cynic taught the doctrines of strict self-denial and self-control and gained considerable notoriety for the austere habits of his private life. It was during this period that he is supposed to have lived in a discarded "tub" that had been a container for wine or oil used with the sacrifices offered at the temple of Cybele. This type of vessel was not an ordinary tub but what the Greeks called a *pythos*, which was an earthenware cask with a capacity of perhaps 200 gallons and large enough for a man to lie in at full length. Ancient writers say that paupers and beggars in Athens sometimes lived in *pythoi*, and Diogenes, who denied himself all the usual comforts and pleasures to emphasize his teachings, may have for a time imitated the example of the destitute. The story that Diogenes wore a tub over his head during the day and slept in it at night was an invention of much later date than the original story. Frequent reference is made to the use of a tub by Diogenes as a "lecture platform," and in *Comus* Milton mentions fetching "doctrines from the Cynic tub." Ancient writers do not mention the pillar surmounted by a dog which was raised at Athens to the memory of Diogenes and which is said to have borne this inscription:

Say, dog, I pray, what guard you in that tomb?

"A dog." His name? "Diogenes." From far?

"Sinope." He who made a tub his home?

"The same. Now, dead, among the stars a star."

Cynic is derived from Greek *kynikos*, "dog," and Diogenes was so called because he was reputed to live and act like a dog. Diogenes Laertius quotes him as saying: "I am called a dog because I fawn on those who give me anything, I yelp at those who refuse, and I set my teeth in rascals." Cercidas of Crete called Diogenes "a true-born son of Zeus, a hound of heaven." Later *cynic* was applied to a sect of Greek philosophers who taught contempt of all pleasures, and from this sense the term came to signify a misanthrope or a curish, captious, sneering person. A cynic, observed Oscar Wilde in *Lady Windermere's Fan*, is "a man who knows the price of everything and the value of nothing." According to another story, Diogenes was once seen carrying a lighted lantern through the streets in broad daylight, and when asked what he sought, he replied, "I am looking for an honest man." Whether this story is authentic we have now no means of ascertaining, but it is of ancient date and in keeping with other anecdotes told of the Cynic. Diogenes Laertius says only: "Once he lighted a candle at noonday,

and said, 'I look for a man.' " Something similar to his alleged search for an honest man is suggested in Jeremiah 5:1, which reads: "Run ye to and fro through the streets of Jerusalem, and see now, and know, and seek in the broad places thereof, if ye can find a man, if there be any that executeth judgment, that seeketh the truth; and I will pardon it." Diogenes was noted for his pranks. After Plato made a hit among the learned men of Athens by defining a man as "a two-legged animal without feathers," Diogenes stripped a rooster of its feathers and brought it before his pupils in the Academy, saying, "Here is Plato's man for you," which compelled the other philosopher to add "with broad nails" to his definition. Alexander the Great admired Diogenes and paid him a visit after having been proclaimed general of all the Greeks against the Persians. Of this incident Plutarch wrote:

While he stayed here, many public ministers and philosophers came from all parts to visit him and congratulated him on his election, but contrary to expectation, Diogenes of Sinope, who then was living at Corinth, thought so little of him, that instead of coming to compliment him, he never so much as stirred out of the suburb called the Cranium, where Alexander found him lying alone in the sun. When he saw so much company near him, he raised himself a little, and vouchsafed to look upon Alexander; and when he kindly asked him whether he wanted anything, 'Yes,' said he, 'I would have you stand from between me and the sun.' Alexander was so struck at this answer, and surprised at the greatness of the man, who had taken so little notice of him, that as he went away he told his followers, who were laughing at the moroseness of the philosopher, that if he were not Alexander, he would choose to be Diogenes.

Did Darwin believe that man descended from monkeys?

Whether Charles Darwin believed that man descended from monkeys is a question capable of starting a lively argument around almost any dinner table. The controversy generally hinges on a difference of opinion as to the meaning of words rather than of facts. Contrary to a common notion, Darwin did not believe or say that the human race descended directly from any species of ape or other animal now in existence; but he did believe that man and the anthropoid apes descended from a common ancestor and that this common progenitor was apelike and would be properly classified as an ape or monkey by a naturalist. There can hardly be a doubt, wrote Darwin in *The Descent of Man* (1871), "that man is an offshoot from the Old World Simian stem." And again: "The Simiidae then branched off into two great stems, the New World and Old World monkeys; and from the

latter, at a remote period, man, the wonder and glory of the Universe, proceeded." According to his theory of evolution through "natural selection," some ancient member of the anthropomorphous subgroup of apes gave birth to man and the divergence of the human and ape types probably occurred hundred of thousands if not millions of years ago. The present-day apes branched off in one direction, while the human race went in another, and each branch developed characteristics of its own, becoming more and more unlike the common progenitor. "We must not," declared Darwin, "fall into the error of supposing that the early progenitor of the whole Simian stock, including man, was identical with, or even closely resembled, any existing ape or monkey." In his general summary the scientist wrote: "By considering the embryological structure of man—the homologies which he presents with the lower animals—the rudiments which he retains—and the reversions to which he is liable, we can partly recall in imagination the former condition of our early progenitors, and can approximately place them in their proper place in the zoological series. We thus learn that man is descended from a hairy, tailed quadruped, probably arboreal in its habits, and an inhabitant of the Old World. This creature, if its whole structure had been examined by a naturalist, would have been classed among the *Quadrumana*, as surely as the still more ancient progenitor of the Old and New World Monkeys." In a postscript on a private letter to Sir Charles Lyell, Darwin observed facetiously: "Our ancestor was an animal which breathed water, had a swim bladder, a great swimming tail; an imperfect skull, and undoubtedly was an hermaphrodite! Here is a pleasant genealogy for mankind." In the light of these specific quotations from Darwin's writings, the question whether he "taught that men are descended from monkeys" is merely academic.

When did *collective bargaining* originate?

Just when *collective bargaining* originated is not known. The phrase appears to have been used very rarely until about 1910. It is a labor-union term and refers to a method of determining wages, hours and working conditions by direct negotiation between the representatives of a labor union on one hand and an employer on the other. Instead of acting individually, as in the case of individual bargaining, the employees act as a group in presenting their demands and their representatives hold conferences with the representatives of the employers to adjust matters in dispute. The principle of collective bargaining is negotiation for the settlement of the terms of a labor

contract between a union or a group of unions and an employer or a group of employers. The individual employee subordinates himself to the common interest of his fellows and in return receives benefits that he could not obtain alone. This principle, now taken for granted, was not so obvious a few generations ago. At first the mere advocacy of collective bargaining was regarded as a form of rebellion and mutiny. Labor compelled capital to recognize the principle of collective bargaining only after a long and bitter struggle. The Erdman Act of 1898 was the first federal act that recognized the legal right of workers to organize and "to bargain collectively through representatives." Similar acts recognizing collective bargaining to a limited extent had been passed by the British Parliament in 1875. Although the idea is old the exact origin of the term is not a matter of record. Both *collective* and *bargaining* were used in connection with labor matters before they were combined into *collective bargaining*. "The term," declared the United States Department of Labor in a letter to the author, "correctly describes the act performed and doubtless came into use when labor agreements began to be generally made. The expression was but occasionally used until after the opening of the present century. It became very common during the First World War and has been in general use since the Industrial Conference called by President Wilson in the fall of 1919." In 1935 Congress passed the National Labor Relations Act (Wagner Act), which made collective bargaining generally mandatory on employers and employees engaged in or affecting interstate commerce. By 1946 the Department of Labor reported that nearly 14,000,000 American workers were covered by collective bargaining agreements.

What determined the width of the climatic zones?

The earth is divided into five grand divisions in respect to latitude and temperature. They take their names from the prevailing climate and are known as the Torrid, North and South Temperate, and North and South Frigid zones. Their boundaries are parallels of latitude and their width is determined by the amount of inclination of the earth's axis to the plane of the ecliptic—about 23 degrees and 27 minutes. The Torrid Zone is 46 degrees and 54 minutes wide, and is all the earth's surface between the parallels known as the Tropic of Cancer and the Tropic of Capricorn, which are 23 degrees and 27 minutes north and south of the equator. Because the sun is always vertically overhead at some point in this zone a warm climate prevails. The North and South Frigid zones lie between the poles and the polar circles, which

are 23 degrees and 27 minutes from the poles. Here the climate is cold because the sun strikes the earth obliquely and at every point in each zone there is at least one day in the year when the sun does not rise and one when it does not set. The North and South Temperate zones lie between the polar circles and the Torrid Zone and each is about 43 degrees and 6 minutes wide. Their climate is variable because the sun is always south of the zenith at noon in the north temperate zone and north of it in the south temperate zone, but it rises and sets daily in each throughout the year. Owing to the flattened figure of the earth the length of a degree of latitude varies from 69.407 miles near the poles to 68.704 miles near the equator. Thus the width of the Torrid Zone is about 3,225 miles, and the Frigid zones are each slightly more than half that width. This classification of the earth into zones is very ancient. J. K. Wright, in a work published by the American Geographical Society in 1925, wrote: "Parmenides [about 500 B.C.] may have been the first to conceive of zones upon the earth's surface corresponding to the zones into which the astronomers had divided the heavens. Eratosthenes is said to have been the first to place the theory of terrestrial zones upon a firmly scientific footing, 'by determining exactly upon the sphere the position of the fixed circles which mark the limits of each zone.' Ancient geographers set the number of terrestrial zones at five, though they differed as to the character of the climates within them. The general opinion—one which was shared by Aristotle—was that the polar caps and the equatorial regions were incapable of sustaining life, the first on account of cold, and the second on account of heat." Wyoming and Colorado both lie within the same number of degrees of latitude and longitude and their boundaries are conterminous with and parallel to these latitude and longitude lines, but Wyoming's area is about 6,000 square miles less than Colorado's because it lies farther north. Although the latitude lines are equidistant at all points, the longitude lines come closer and closer together until they meet at the poles.

Where is the Klondike?

The Klondike is a more or less indefinite district in Yukon Territory in northwestern Canada. It borders on Alaska and lies chiefly south of the Klondike River, which flows into the Yukon from the east at Dawson City. Many people in the United States are under the impression that the Klondike is in Alaska and that Dawson City is an Alaskan town. This error arises from the fact that the Klondike not only lies around the upper stretches of the Yukon, a stream that flows

through the heart of Alaska after leaving Canadian territory, but was reached by the gold seekers of 1898 by way of lower Alaska and the Skagway route. In fact the early gold seekers did not know or care very much whether they were in Alaska or Canada. The Alaskan-Canadian boundary was not finally determined until the administration of President Theodore Roosevelt. Rich gold-bearing gravels were discovered on Bonanza Creek in the Klondike in 1896 and within the next three or four years some 30,000 fortune hunters entered the almost inaccessible region by way of the "Yukon Trail." Dawson City, capital of Yukon Territory, was founded in the same year that gold was discovered on Bonanza Creek and was named after George Mercer Dawson (1849-1901), Canadian geologist and naturalist, who was in charge of the Canadian government's Yukon expedition in 1887. Just who actually discovered gold in the Klondike is a subject of dispute. It seems that Robert Henderson ("Klondike Bob") a native of Prince Edward Island, who died at Vancouver in 1933 at seventy-six, found gold there early in 1896. On August 17 of the same year Kate Carmack, the Indian wife of George W. Carmack, while washing clothes in the creek eight or ten miles from the present Dawson City, noticed yellow pebbles or flakes in the water and took some of them to her husband and her two kinsmen, "Skookum Jim" and "Tagish Charlie." Carmack and his Indian relatives lost no time in making investigation, using hunting trips as blinds. Carmack, out fishing with Kate, panned the first high-grade gravel on Bonanza (Gold) Creek, which flows into the Klondike, and he was the first to stake out a claim. The news spread like wildfire among the "panners" in the region and soon reached the outside world, resulting in one of the most famous gold rushes of history. Carmack himself became a millionaire. *Klondike* is derived from *Tron-duik* or *Thron-duick*, the name applied to the stream by a tribe of Athabascan Indians who lived in that region.

Who said: "He who would bring home the wealth of the Indies must carry the wealth of the Indies with him"?

The following inscription appears on the facade of the Union Station in Washington, D.C.:

He that would bring home the wealth of the Indies must carry the wealth of the Indies with him. So it is in traveling; a man must carry knowledge with him if he would bring home knowledge.

This inscription, along with others on the building, was suggested and edited by President Charles W. Eliot of Harvard University. It was

taken from James Boswell's *The Life of Samuel Johnson, LL.D.* (1791), which contains the following passage under date of 1778:

I said to him that it was certainly true, as my friend Dempster had observed in his letter to me upon the subject, that a great part of what was in his *Journey to the Western Islands of Scotland* had been in his mind before he left London.

Johnson: "Why yes, Sir, the topics were; and books of travels will be good in proportion to what a man has previously in his mind; his knowing what to observe; his power of contrasting one mode of life with another. As the Spanish proverb says, 'He, who would bring home the wealth of the Indies, must carry the wealth of the Indies with him.' So it is in traveling; a man must carry knowledge with him, if he would bring home knowledge."

Boswell: "The proverb, I suppose, Sir, means, he must carry a large stock with him to trade with."

Johnson: "Yes, Sir."

This "Spanish proverb" has never been traced to any other source. It may have originated with Dr. Johnson himself.

What is Hong Kong?

Hong Kong is not the name of a city in China, as many people suppose, but the name of an island and a territory near the mouth of the Canton River on the great bulge of China. Hong Kong proper is a rocky island about eleven miles long and lying in the South China Sea about seventy-five miles southeast of Canton. The British East India Company had headquarters at Canton from 1684 to 1839, when war between Britain and China broke out because the Chinese objected to the importation of opium and the British were dissatisfied with the treatment of their subjects in China. At that time Hong Kong was a desolate island inhabited only by a few scattered fishermen and pirates. In 1841 the British seized Hong Kong and the following year China formally ceded it to them. The permanent acquisition of Hong Kong by the British was one of the chief results of the Opium War of 1839-1842. Victoria, now a populous city, was built as the capital of the island and named after Queen Victoria, then "the girl queen." Later the British acquired by cession and lease several neighboring islands and territory on the mainland. Greater Hong Kong, composed of Hong Kong proper, the Kowloon Peninsula, the New Territories, Stonecutters' Island and several smaller islands—with a total area of about 391 square miles—became the British Crown Colony of Hong Kong. Because of its spacious harbor and strategic location, the island of Hong Kong became an important trade center and British naval base

in the Orient. *Hong Kong* is derived from two Chinese characters variously interpreted as meaning "sweet stream" and "fragrant port." During the Second World War Hong Kong was occupied by the Japanese from December, 1941, to September, 1945. The notion that Hong Kong is a city probably arose because the port itself is called Hong Kong rather than Victoria and because newspaper dispatches are generally dated from Hong Kong without the name of any city being given.

How are walled lakes formed?

Wall Lake in Sac County, Iowa, is one of the best examples of what are popularly called walled lakes. Pioneers testified that originally this lake, which is about two miles long and one mile wide, was surrounded with a wall composed of granite boulders piled upon one another in such a manner as to suggest an artificial wall. There is a local legend that the Indians, or perhaps an earlier race in the region, built the wall to prevent the lake from overflowing. A similar story is told of Wall Lake in Wright County in the same state. Most of the boulders once around these lakes have been hauled away by farmers for building purposes. Geologists call the walls around lakes of this type "ice ramparts." Such walls, they explain, are formed around shallow lakes by the expansion of water when it freezes. Each time the lake freezes solid to the bottom the boulders and other objects in the lake are crowded shoreward a fraction of an inch. After thousands of years ridges or ramparts are formed on the shore. Sometimes the lateral motion of the ice is materially increased by the formation of fresh ice in cracks.

Do snakes have voices?

Snakes do not have larynges or vocal chords and consequently they do not have true voices in the generally accepted sense of that term as applied to animals and human beings. Most naturalists do not credit reports of snakes that bleat like deer, purr like cats, cough like monkeys, bark like dogs, chirp like birds, bellow like bulls or make other vocal sounds. It is often said that the bull snake (*Pituophis*), largest of all American harmless snakes, received its popular name from the fact that it "bellows" or "roars" like a bull. That, of course, is pure imagination. It is probable that the notion that the bull snake bellows like a bull was suggested by the snake's popular name rather than that the snake was so named because of any sound it makes. Many snakes are capable of making a hissing noise, which is produced by the air

rushing from the throat when the lungs are deflated. This, according to snake experts, is the only *voice* possessed by snakes. The hissing of some species, such as the boa constrictors, pythons, American puffing adders and the bull snakes, can sometimes be heard at a considerable distance, although there is a tendency to exaggerate the intensity of the sound. Peter of Albano wrote about 1303 A.D. that there was a snake in Nubia called *regulus* that killed its victims by its hiss. This notion was suggested no doubt by the story of the classical basilisk, a fabled serpent, lizard or dragon, whose hissing would drive away all other serpents and whose glance was fatal. Rattlesnakes make the rattling noise by vibrating the tips of their tails. Several species without rattles vibrate their tails violently when excited and when in contact with leaves or loose earth make a rustling sound. Other species produce a swishing sound by the movement of the scales one over another. Various sounds attributed to snakes often, upon investigation, prove to come from other sources. The natives of Central Africa believe that a cobra in that region "crows like a cock." Explorers who investigated found that the "crowing" came from a small railbird with a plaintive call. In Genesis 3 the serpent is represented as talking to Eve and there is a legend that loss of voice was one of the penalties imposed upon the serpent for beguiling the first woman. The Jewish historian Josephus says that God "also deprived the serpent of speech, out of indignation at its malicious disposition toward Adam."

Why is the Caesarean operation so called?

The removal of a child from the mother's womb by cutting the walls of the abdomen when natural delivery is impossible is known in obstetrics as a Caesarean operation, birth or section. How the operation received this name is not known for certain. The popular and most probable explanation is that the name was suggested by a legend that Julius Caesar was brought into the world by this method. Pliny the Elder and other Roman writers refer to Caesarean operations in connection with the births of Scipio Africanus, Manlius and several other ancient Romans, but they do not say that Julius Caesar was born in this manner, and there seems to be good reason for believing his birth was natural. According to Greek mythology, Aesculapius, the father of medicine, was the son of Apollo by a nymph named Coronis and was delivered by Caesarean section by Apollo after he had killed the mother in a fit of jealousy. In the time of Julius Caesar the Caesarean section—delivery of a child through a cut in the front of the abdomen—was not performed on living women. An early Roman law

required that such an operation should be performed on every pregnant woman who died. Later the operation was also performed on pregnant women at the point of death. At first the operation was resorted to solely as a religious measure in the interest of the unborn child after the life of the mother had been despaired of. The law required that an unborn child should be removed from a dead mother and buried or cremated separately even when there was no prospect of saving its life. Julius Caesar's mother Julia lived many years after his birth and he wrote numerous letters to her. Nevertheless there was an early tradition that Caesar was born by what is known as the Caesarean section. This popular belief was illustrated in an edition of Suetonius' works published in 1506. Accordingly it may be, as in many other cases, that the name was derived from a legend that was untrue. Some writers believe the name goes back farther than Julius Caesar. They assert that children delivered in this manner were known among the Romans as *Caesones*, and that *Caesar* as a family name was first applied to a person so born and so known. Other writers hold that in its obstetrical sense *Caesarean* is merely a corruption of Latin *caesus*, past participle of *caedere*, "to cut," *caesura*, literally meaning "a cutting," being derived from the same source. There is, however, nothing in the etymological history of the word to indicate that it had such a derivation or that its form was ever anything except that of an adjective formed from the proper name *Caesar*. A still weaker theory is that the operation received its name from the fact that the *lex regia* under the Roman kings became *lex Caesare* under the Roman emperors. The earliest recorded Caesarean operation that was survived by both mother and child was performed in 1491 by a Swiss butcher and pig gelder who operated upon his wife. It is believed that the first operation of this kind in the United States, in which both mother and child survived, was performed April 22, 1827, by Dr. John Lambert Richmond at Newtown, Ohio. Nowadays it is not uncommon for women to undergo successfully several Caesarean operations. In 1935 a mother and triplets all survived such an operation performed at Los Angeles.

What birds cannot walk or hop?

Humming birds, swifts, swallows and martins cannot walk or hop on a horizontal surface with any degree of ease. Of these the hummingbirds are the most helpless on the ground. Swifts, swallows and martins have feet that are adapted only to perching and to clinging to perpendicular surfaces. These birds spend much time on the wing

and it has been suggested that some of the swifts spend the entire night in flight at great heights. They are so perfectly streamlined that even their nostrils point backward. Swifts are peculiar among birds in that they flap their wings alternately rather than simultaneously. Most swallows and swifts seldom alight on the ground; they capture insects for food, scoop up water from ponds and lakes for drink and pluck twigs and gather other materials for their nests all while on the wing. When some species of swifts are placed on a smooth surface they make a very clumsy take-off. Some naturalists assert that both the chimney and the white-throated swift pair while in flight, although other authorities question this assertion and doubt that any species of bird actually mates in mid-air. A fabulous Oriental bird that never alighted but was always on the wing is known as the *huma*.

What does *crossing the Rubicon* mean?

Crossing the Rubicon means committing oneself to a dangerous course from which there is no retreat. In ancient times the Rubicon was a small stream forming the boundary between Italy proper and Cisalpine Gaul, the province allotted to Julius Caesar. When the Roman Senate voted to recall Caesar in 49 B.C. he decided to march on Rome in violation of a law of the republic that forbade a general to enter Italy with his troops under arms. The act was tantamount to a declaration of war. The Roman historian Suetonius, who wrote in the second century A.D., says of Caesar:

Coming up with his troops on the banks of the Rubicon, which was the boundary of his province, he halted a while, and, revolving in his mind the importance of the step he was about to take, he turned to those about him and said: "We may still retreat; but if we pass this little bridge, nothing is left for us but to fight it out in arms." While he was thus hesitating . . . a person remarkable for his noble mien and graceful aspect appeared . . . playing upon a pipe. When not only the shepherds but also a number of soldiers flocked from their posts to listen to him, and some trumpeters among them, he snatched a trumpet from one of them, ran to the river with it, and sounding the advance with piercing blast, crossed to the other side. Whereupon Caesar exclaimed: "Let us go whither the omens of the gods and the iniquity of our enemies call us."

In his life of Pompey, Plutarch says of Caesar:

For when he came to the banks of the Rubicon, a river that made the bounds of his province, there he made a halt, pausing a little, and considering, we may suppose, with himself the greatness of the enterprise which he had undertaken; then, at last, like men that are throwing themselves

headlong from some precipice into a vast abyss, having shut, as it were, his mind's eyes and put away from his sight the idea of danger, he merely uttered to those near him in Greek the words, *Anerriphtho kubos*, (let the die be cast), and led his army through it.

Plutarch elaborates on this in his life of Caesar:

When he came to the river Rubicon, which parts Gaul within the Alps from the rest of Italy, his thoughts began to work, now he was just entering upon the danger, and he wavered much in his mind when he considered the greatness of the enterprise into which he was throwing himself. He checked his course and ordered a halt, while he revolved with himself, and often changed his opinions one way and the other, without speaking a word. This was when his purposes fluctuated most; presently he also discussed the matter with his friends who were about him (of which number Asinius Pollio was one), computing how many calamities his passing that river would bring upon mankind, and what a relation of it would be transmitted to posterity. At last, in a sort of passion, casting aside calculation, and abandoning himself to what might come, and using the proverb frequently in their mouths who enter upon dangerous and bold attempts, "The die is cast," with these words he took the river.

This may be merely a legend. The historian James A. Froude says: "The vision of the Rubicon, with the celebrated saying that *the die is cast*, is unauthenticated, and not at all consistent with Caesar's character." Nonetheless, Caesar's crossing the Rubicon with his troops precipitated civil war and made him master of Rome. The stream known to the ancient Romans as the Rubicon cannot now be identified positively. The preponderance of historical, archaeological and geological evidence, however, indicates that the Rubicon's upper course is represented by the modern Pisciatello and its lower course by the modern Fiumicino, which flows into the Adriatic near Rimini. These streams, geological evidence indicates, were once united. In 1932 the Italian government, after making a thorough investigation, declared officially that the Fiumicino is the true Rubicon of the ancients. In his life of Julius Caesar, Suetonius says: "Shortly before his death, as he was told, the herds of horses which he had dedicated to the river Rubicon when he crossed it, and had let loose without a keeper, stubbornly refused to graze and wept copiously."

How did the *three wise monkeys* originate?

The three wise monkeys—figures of apes holding their hands over their mouth, eyes and ears respectively—symbolize an Oriental proverb, "Speak no evil, see no evil, hear no evil," which is believed to be of

either Chinese or Japanese origin. This proverb did not become current in the Western world until after the figures of the three wise monkeys were introduced from the Orient as souvenirs. In Japanese the proverb reads, *Iwazaru, mizaru, kikazaru*, literally meaning "non-speaking, non-seeing, non-hearing." It is often said that the names of the monkeys are Iwazaru, who speaks no evil; Mizaru, who sees no evil, and Kikazaru, who hears no evil. Each word in the proverb ends with *zaru*. Addition of *zaru* to a Japanese verb transforms it into a negative adjective. The Japanese word for "monkey" is *saru*, which when preceded by a modifier phonetically becomes *zaru*. Thus the monkeys became associated with the proverb merely as a pun. Sometimes the three monkeys are called "the little apes of Nikko," because they were found portrayed in mural decorations in ancient tombs at Nikko. Some authorities interpret the three apes as symbolizing the fact that the Japanese talks too much, the Chinese sees too much, and the Indian hears too much. A Chinese legend says Confucius originated the proverb and the symbol. When the philosopher told his disciples he was about to depart from the earth they asked him to give them a special message as a guide for their lives. The sage complied by drawing pictures of three monkeys in the sand and gave his disciples the maxim, "Speak no evil, see no evil, hear no evil."

What is the *Flying Dutchman*?

The *Flying Dutchman* is a legendary phantom ship that was formerly believed to haunt the seas around the Cape of Good Hope. Seamen used to regard it as an ill omen to see this specter ship. "They who see the Flying Dutchman never, never reach the shore," wrote the Irish-American poet John Boyle O'Reilly. There are many versions of the legend. Sir Walter Scott said that originally the Flying Dutchman was carrying a cargo of precious metals from the Indies to Europe. A foul murder was committed on board and a plague broke out among the sailors, after which no port would allow the vessel to enter and it was condemned to be tossed upon the waves forever like a ghost. According to the more usual version, however, a Dutch ship commanded by Captain Vanderdecken started to round the Cape during one of the terrific storms for which that region is noted. The crew begged the captain to wait until the strong head winds and heavy seas had subsided. But the captain, half-crazed by strong drink, determined to proceed in spite of strong winds and high water. A mutiny followed, but the captain suppressed it by putting the ringleaders to death. Then the Holy Ghost, in the form

of St. Elmo's fire, appeared at the masthead and warned him to desist. He drew his pistol and fired at the light. The pistol exploded, shattered his hand and paralyzed his arm. Wild with rage the captain cursed his Creator and swore profanely he would continue to round the Cape against the wind if it took until the crack of doom. Providence, says the legend, took the blasphemous captain at his word, and to this day the phantom ship, with threadbare sails, with sides and beams whitened by age and with the captain and crew reduced to little more than shadows, may be seen sailing against the wind in a vain effort to double the Cape. Unable to lower a boat, the captain occasionally hails a passing vessel with his trumpet and asks it to carry letters to his people back home. While a midshipman on H.M.S. *Bacchante* the late King George V of England recorded in the ship's log that a sailor who reported seeing this phantom ship died soon afterwards. The Dutch, German and English versions of the legend are substantially the same, except that each country identifies the captain of the *Flying Dutchman* as a different person. Possibly the original *Flying Dutchman* was a "mirage ship." Owing to the unequal refraction in the lower strata of atmosphere, ships actually beyond the range of vision sometimes appear to *loom* in the distance as if suspended in mid-air.

How did the Hitlerites get the name *Nazi*?

Nazi as applied to the followers of Adolf Hitler was a phonetic respelling of the first two syllables of *Nationalsozialistische Deutsche Arbeiter-Partei*, which is German for "National Socialist German Workers' Party" and which was adopted as the official name of the Hitler organization. *National* in German is pronounced *naht-si-o-nal*, and *Nazi*, equivalent to English *Nati*, is correctly pronounced *NAHT-si*, with the *i* short as in *bit*. It is not true, as sometimes stated, that *Nazi* was made up, after the manner of a trade name, from the first two and the eleventh and twelfth letters of the first compound word in the official name of the party. *Nazi* was already common among Germans as the familiar diminutive of *Ignaz* or *Ignatz* and it caught the public fancy and readily passed into general use as the name of the followers of Hitler. *Nazi* originated in Germany, but it was applied to the Hitlerites by their enemies and therefore had a slightly derogatory implication within Germany. It was never accepted by the Nazis themselves and Hitler never used the term in *Mein Kampf* or in his other writings and speeches. After Hitler became master of Germany the term virtually disappeared from German usage.

Even foreign correspondents in Germany were forbidden to use *Nazi* on the ground that it had a bad sound to the ears of foreigners. The Nazi government insisted that the correspondents say *National Socialist* or avoid the term altogether. But outside Germany *Nazi* and *Nazism* continued to be the favorite terms for the Hitlerites and their regime among people opposed to them. Writers have a hard time deciding whether to spell the name of the system *Nazism* or *Naziism*. Even some government agencies spell it with one *i*, while others spell it with two. *Webster's New International Dictionary* gives *Nazism* first and *Naziism* second. But when spelled *Naziism* it has one more syllable than when spelled *Nazism*.

Is a crocodile's skin bulletproof?

That the skin of the crocodile is bulletproof is a common notion. But the thick, tough hide of a crocodile or an alligator is not impervious to the bullet of a high-powered rifle. The belief that it is arose from the fact that a bullet fired at one of these reptiles will sometimes glance off when it strikes the bony plate of the crocodilian armor at an angle. Under ordinary conditions the bullet of a rifle even of comparatively small caliber will penetrate the skin of the largest crocodile or alligator at any point. The skin of the whole body of a crocodilian is covered with scales that are more or less flat. The characteristic armor, especially on the back, is composed of the hard, horny, somewhat ossified ends of the scales. Between the scales the skin is comparatively soft. Tanned alligator skin is a popular leather for bags, shoes and other articles. The plated hide from the backs of crocodiles is invulnerable to arrows and javelins and the native warriors in Africa used to use it in their shields and armor.

How does one change his name?

Although it is customary for a person to bear the name of his parents, he is under no legal obligation to do so, and in the United States anybody may change part or all of his name at will, provided he does it in good faith and for an honest purpose. If he desires he may change his name simply by adopting a different one, without any legal process whatever. In the early days of this country the regular practice of changing names was for the state legislature to pass a special act upon receiving a petition from the citizen desiring to have his name changed. Now most of the states have statutes covering the subject. As a rule these statutes do not repeal the common-law priv-

ilege of changing one's name at will without legal formality. They merely supply an additional method, which consists of applying to a court to authorize the change. Such applications are generally granted as a matter of course and the court order serves as a public record and as a means of identification. In a few cases courts have held that after a person has changed his name by legal process he is not entitled to the privilege of changing it again at will. The Naturalization Act of 1906 provided: "It shall be lawful, at the time and as part of the naturalization of any alien, to make a decree changing the name of said alien, and his certificate of naturalization shall be issued to him in accordance therewith." Should the alien not have his name changed when he is naturalized he may do so later like any other citizen. In 1931 United States Senator James Couzens, of Michigan, requested Judge Henry S. Hulburt, of Detroit, to deny the petition of Abraham Dworkin to have his name changed to Albert Couzens, the same name as that of the senator's brother. Judge Hulburt agreed with Couzens and denied the petition on the ground the change in name was "against public interest" and might tend to confuse identities. In 1942 Federal District Judge George A. Welsh, of Philadelphia, refused the request of fifty-four new citizens to change their names when they received their final citizenship papers. The judge, after saying that "national origin is of utmost importance" in wartime, told the applicants that "the local courts are open to you if you want to change your last names, but the records of the Federal courts which show your original national origin shall be kept intact and unchanged for the duration." Although it is customary for her to do so, a woman is under no legal obligation to assume her husband's name when she marries.

Is powdered glass a poison?

Since ancient times it has been popularly believed that finely ground glass taken into the digestive system of human beings and animals acts as a poison and causes death. In the Middle Ages a writer said that dogs particularly are inevitably killed when they swallow powdered glass. A poison, in the most widely accepted sense of the term, is a substance that is capable of acting deleteriously on the body or destroying life when injected into the blood or taken internally in small doses. The ingredients of glass possess no inherent qualities that justify their classification as a poison. Finely powdered glass, like many other substances not generally regarded as poisons, would affect health unfavorably and might even cause death if swal-

lowed in large quantities or under exceptional circumstances. Experiments with guinea pigs, rabbits and rats prove that pulverized glass in small quantities does not injure the stomach or intestines. Three hundred years ago Sir Thomas Browne, in *Vulgar Errors*, reported that dogs given as much as a dram of powdered glass in butter and paste showed no "visible disturbances." In 1909 a group of doctors and scientists in Germany made an investigation of this subject after Berlin newspapers attributed the death of a physician to pulverized glass in his food. The investigators found that the physician had died from eating spoiled sausage and they concluded that the ground glass theory of death is largely a myth. They reported that in many cases where death had been ascribed to ground glass it was actually produced by unground pieces of glass cutting through the lining of the stomach and intestines and not by the supposedly poisonous effect of the powdered glass. If pins, needles or metal filings, which are not poisons, were swallowed they would injure the body in the same manner. The report called attention to a shoemaker who had taken a teaspoonful of sugar and powdered glass three times a day for years without any ill effects. It is safe to say that the stories, ancient and modern, of persons being secretly poisoned by putting ground glass in their food are essentially fabulous, because if the glass were pulverized so completely that it could not be detected it probably would not injure a person in sound health.

Can salamanders live in fire?

In ancient times it was commonly believed that certain small Old World tailed amphibians resembling lizards and newts and known as salamanders possessed bodies invulnerable to fire and heat. Literature contains numerous allusions to the salamander's ability to breathe flames and live in fire unharmed. The creature, so it was said, not only endured the flames without being burned but also extinguished them like ice. This story, now regarded as a fable, was universally believed in the time of Aristotle, who referred to it without questioning its authenticity. Even at the present time one not infrequently meets with persons who believe that the body of the salamander is protected from fire in a particular manner. Pliny the Elder, who perished in 79 A.D. when Pompeii was destroyed, doubted that salamanders could withstand fire, despite the statements of ancient naturalists and philosophers. He caught a salamander and placed it in flames to test the belief. The creature was sacrificed in the cause of science. Instead of breathing and extinguishing the flames it was itself soon

burned into powder by them. Galen, a Greek physician who resided at Rome about a century later, concluded that the belief had been suggested by the natural coldness and dampness of the salamander's body, which enables it to endure flames for a short time, although it is soon consumed. By absorbing water through its skin a salamander can increase its weight by 30 or 40 percent within a few hours. Salamanders often crawl into crevices in damp logs and no doubt they have often been carried into houses and in the vicinity of fire-places with wood. The notion that they are fond of the fire may have been suggested by the fact that occasionally one of these tiny amphibians, thrown into the fire with fuel, in desperation would jump into the flames to escape the heat of the log. The belief about salamanders being invulnerable to fire may have been perpetuated to some extent by the fact that certain incombustible cloths woven from asbestos or other mineral filaments were called "salamander's wool," which created the impression that it was derived from that creature. Benvenuto Cellini (1500-1571), Italian artist, metal worker and sculptor, wrote as follows about the salamander myth in his celebrated autobiography:

When I was about five years old my father happened to be in a basement-chamber of our house, where they had been washing, and where a good fire of oak-logs was still burning; he had a viol in his hand, and was playing and singing alone beside the fire. The weather was very cold. Happening to look into the fire, he spied in the middle of those most burning flames a little creature like a lizard, which was sporting in the core of the intensest coals. Becoming instantly aware of what the thing was, he had my sister and me called, and pointing it out to us children, gave me a great box on the ears, which caused me to howl and weep with all my might. Then he pacified me good-humouredly, and spoke as follows: "My dear little boy, I am not striking you for any wrong that you have done, but only to make you remember that that lizard which you see in the fire is a salamander, a creature which has never been seen before by any one of whom we have credible information." So saying, he kissed me and gave me some pieces of money.

Did the Hawaiians invent the ukulele?

The ukelele, essentially a small guitar with only four strings, is not of native Hawaiian origin as is commonly supposed. It was introduced to the Hawaiians in the latter part of the eighteenth century by Portuguese sailors. So far as known the guitar, a six-stringed instrument of the lute class, is of European origin. In the Royal Library at Stuttgart, Germany, is a manuscript dated 1180 A.D. that contains a representation of the instrument. *Guitar, cither, cithern,*

cittern, *zither* and *gittern* are all derived directly or indirectly from *cithara*, the Greek and Latin name of a sort of lyre, which had from seven to eleven strings. According to legend, the first ukulele was designed by a white man in Hawaii who modified the Portuguese guitar by reducing the size of the instrument and the number of strings. The Puerto Rican guitar has only four strings and is locally known as *cuatro*, "four." The Hawaiians named the little guitar *ukulele*, a native word literally meaning "jumping flea." It is derived from *uku*, "flea" or "insect," and *lele*, "to jump." This name was suggested by the rapid motions of the fingers of the player over the instrument. The accepted English pronunciation of the name is *YOU-ka-LAY-lee*, although *OO-ka-LAY-lay* more nearly approaches the Hawaiian pronunciation. The ukulele is particularly adapted to the wistful minors peculiar to the native music of Hawaii. The Hawaiians used the ukulele so extensively in connection with their native songs and dances that by 1875 it was already widely mistaken for an instrument of native origin. Modern Hawaiian ukuleles are generally made of koa, a fine-grained wood from the native tree called *Acacia koa*. In the United States the ukulele became a popular instrument of jazz. About 1925 Will Rogers described it as a "so-called musical instrument, which, when listened to, you can't tell whether one is playing it, or just monkeying with it."

Do bears inhabit the Southern Hemisphere?

The spectacled bear (*Ursus arctos*), a rare South American species found in the Andes of Peru, Ecuador and Colombia, is believed to be the only true bear whose habitat is south of the equator. It resembles the small American black bear in size and color and gets its name from the imperfect tawny or light ring around each eye, which gives it a comical appearance. Some authorities regard it as more closely related to the polar bear than to the North American black bear. Members of this species are extremely nervous and for that reason have not thrived in captivity. There are no polar bears in the Antarctic.

Are bulls excited more by red than by other colors?

Bulls are proverbially supposed to become particularly infuriated when they see red objects, especially pieces of red cloth in motion. Hence *seeing red*. This is a myth. Numerous investigations by psychologists indicate that all cattle are virtually color-blind and that the higher animals see everything in about the same colors and

shades that the world appears to human beings at dusk. Distinguishing colors clearly, seeing "all the colors of the rainbow," seems to be a power possessed only by human beings. Experiments indicate that bulls and steers are unable to distinguish red from pink, green, purple or white and that they react to red just the same as they react to other bright colors. But, according to the United States Department of Agriculture, a bull's attention can be attracted with a bright-colored object more readily than with a dull-colored one. One investigator concluded that, if there is any difference at all, white is the most effective color for infuriating a bull. Bullfighters dress in bright colors and wave pieces of bright-colored cloth in the arena not only to infuriate the animals but also to attract the spectators. Red is naturally a favorite color for this purpose because it is bright, the color of blood, and it reacts most quickly on the human optic nerve. But it is the brightness of the cloth *in motion* rather than the particular color that excites and maddens the bull. Waving a green tablecloth or a pair of pink pajamas would excite him just as readily.

How do alligators and crocodiles differ?

The order Crocodilia contains three genera of living reptiles—crocodiles, alligators and gavials. *Crocodile* was originally applied to the Nile species. Herodotus, the father of history, wrote: "In the Egyptian language they are not called crocodiles, but *Shampasae*. The name of crocodiles was given them by the Ionians, who remarked their resemblance to the lizards, which in Ionia live in the walls, and are called crocodiles." *Lizard* and *alligator* are both derived in a roundabout way from the same Greek root that gave us *crocodile*. *Alligator* and *crocodile* are often used indiscriminately in popular speech because the differences between the reptiles so named are not easily distinguishable. There are, however, a number of real differences in the structure and habits of alligators and crocodiles. The alligator has a more obtuse snout and a broader and shorter head than the crocodile. An alligator's head is quite flat with nearly parallel sides, while a crocodile's head is almost triangular. There are not so many webs on the toes of the alligator as on those of the crocodile; the fourth enlarged tooth of the under jaw of the alligator is received into a pit in the upper one, instead of protruding into an external notch as in the crocodile. There is a common notion that the upper part of the snout of a crocodile is stationary, while the lower part of the snout of an alligator is stationary; that is, when the

crocodile opens its mouth it raises the upper jaw, while when the alligator opens its mouth it lowers the lower jaw. But crocodiles and alligators do not differ in the manner in which they move their jaws. All species move only the lower jaw. It is also popularly supposed that alligators are found only in the New World and crocodiles only in the Old. That is not true. One species of alligator is found in China, and at least three species of crocodiles are known to inhabit tropical America, one of these being seen occasionally in Florida. Neither is it true, as sometimes stated, that crocodiles live only in salt water, while alligators live only in fresh water. Gavials are distinguished from crocodiles and alligators chiefly by their longer, narrower and feebler jaws. They are native only to India and southwestern Asia. Several species of *Crocodylia* native to tropical America and closely related to the alligators are known as *caymans*, a term of Carib *Indian* origin. More than 400 years B.C. Herodotus said of the crocodile that "unlike any other animal, it is without a tongue," and his erroneous statement is still sometimes repeated. Crocodilians have tongues. The tongue, however, is flat and thick and is attached by its entire under surface. Folds of the tongue and palate unite to shut off the mouth completely from the cavity of the throat and enable the reptile to lie submerged in the water, with only the nostrils exposed, with the mouth open and without water entering the windpipe to prevent breathing. Many members of *Crocodylia*, particularly the North American alligator, make a loud, bellowing noise. A pair of membranous folds within the glottis serve as vocal cords. "The crocodile," wrote Herodotus, "is esteemed sacred by some of the Egyptians; by others he is treated as an enemy. Those who live near Thebes, and those who dwell around Lake Moeris, regard them with special veneration. In each of these places they keep one crocodile in particular, who is taught to be tame and tractable. They adorn his ears with ear-rings of molten stone or gold, and put bracelets on his forepaws, giving him daily a set portion of bread, with a certain number of victims; and, after having thus treated him with the greatest possible attention while alive, they embalm him when he dies and bury him in a sacred repository."

Why is a kind of liquor called gin?

Gin got its unusual name in a roundabout way from its original flavoring matter. The Dutch, seemingly the first gin makers, made this kind of "ardent spirits" by distilling grain or malt and flavoring the liquid with the juice of juniper berries. *Juniper*, originally from

Latin *juniperus*, became *gynypre* in Middle English and *genèvre* in Middle French. The Dutch form was *genever*, which in time was corrupted into *geneva*, very likely as the result of confusion with the town in Switzerland by that name. Holland gin under the name of Holland *geneva* was already famous in 1684. A few years later *geneva* and its shorter and corrupted offspring *gin* were applied interchangeably to this kind of liquor. Not many imbibers of Holland *geneva* could pronounce the long name and the need of a shorter and more expressive one was obvious. Bernard de Mandeville, in *Fable of the Bees* (1714) wrote: "The famous liquor, the name of which deriv'd from Juniper-Berries in Dutch, is now, by frequent use, from a word of midling length shrunk into a Monosyllable, Intoxicating Gin." Like *rum*, *gin* is now often used as a generic name for any strong drink.

Do amputated limbs sometimes ache?

Persons who have had arms or legs amputated often feel heat, cold, pain and other unpleasant sensations that seem to be in the lost limbs. In the same way extracted teeth sometimes seem to ache. These sensations, though illusory as to location, are occasionally very acute and vivid. Medical scientists generally explain this phenomenon by saying that the nerve centers from which the nerves led to the absent members remain intact and receive impressions from the ends of the severed nerves. In some cases the ends of the nerves may grow slightly after amputation and grow into the scar at the end of the stump limb in an effort to seek and make connections with nerves in the lost limb. When the cut-off nerve ends are pressed or stretched the stimuli are transmitted to the brain, the real seat of physical feeling, and create images and sensations similar to those formerly received through the extended nerves in the amputated limbs. The correctness of this theory appears to be supported by the fact that in some cases the illusion can be speedily dispelled and the phantom limb relieved from pain by a surgical operation or by injecting cocaine or other anesthetics in the scar. It has been suggested that sometimes the "feeling" in amputated arms and legs may be due to the retention by the subconscious mind of "a picture of a complete" body and that the pain is merely mental and not physical at all. Occasionally a person with an amputated leg or arm has the illusion that he possesses and can control the missing member; again he imagines that the phantom part follows the movements of the stump. Not a few accidents to cripples are the result of illusions in which the cripple imagines he still has a missing limb and attempts to move accordingly.

A curious case in point was that of a horseman who had lost a hand. Imagining that he was holding the reins with the phantom hand, he struck the horse with the other and was thrown. There used to be an odd belief that if an amputated limb, even though buried, was in any way disturbed, molested or injured, the stump would register a corresponding sensation.

Can honeybees pollinate red clover?

Clover and other legumes are virtually self-sterile and their flower structure is such that wind is a negligible pollinating agency. These plants depend largely on bees and other insects in quest of nectar for both self-fertilization and cross-fertilization. Insects get pollen on their legs, bodies and mouths and carry it from the male to the female parts of the same flower and from the male to the female parts of different flowers and thus insure fertilization and cross-fertilization. Charles Darwin first demonstrated that clover depends chiefly on bees for fertile seed. Honeybees are many times more valuable for their part in fertilizing blossoms than they are for their honey. Large red clover, however, has such deep corolla tubes that the tongues of ordinary honeybees are too short to reach the nectar readily. Accordingly these blossoms are often passed up by honeybees when smaller varieties are available. As a rule bees restrict themselves to one species of plant so long as it is plentiful and they do not mix their honey except when necessary. There is a common but erroneous impression that honeybees play no part at all in pollinating red clover and that only bumblebees can do that. But red clover is not dependent solely on bumblebees for fertilization. Although honeybees have difficulty in getting nectar from mammoth red clover, they persist in trying and do get small quantities of honey from that source, especially from the smaller blossoms. When there are no other plants to work on, honeybees visit red clover blossoms and are rewarded with large quantities of pollen to feed their young. Their efforts to get nectar from red clover, however, are not successful enough to produce red clover honey in commercial quantities. But in trying to get nectar and in getting large quantities of pollen honeybees are important pollinators of red clover. Studies covering a three-year period showed that red clover in Henry County, Ohio, was pollinated 82 percent by honeybees, 15 percent by bumblebees and 3 percent by other insects. The difficulty is that honeybees, which are generally privately owned, are not always available for the job. Bumblebees, which have long tongues, can easily get

nectar from even the largest red clover blossoms and a profitable partnership exists between them and this plant. Some 200 species of bumblebees are known and they were indigenous to virtually all parts of the world where there is vegetation except Australia and New Zealand. Red clover was not grown successfully from domestic seed in those regions until bumblebees were introduced. About 1884 the British government offered one shilling apiece for hibernating female bumblebees for the purpose of sending them to Australia and New Zealand to pollinate red clover. The bumblebees became acclimated quickly and not only multiplied and spread rapidly but seemed to thrive better in their new home than in their old one. This experiment was successful and since then red clover has been produced in abundance in those regions from domestic seeds. Bumblebee honey, though delicious, is seldom eaten by man because it is produced only in small quantities and is hard to obtain. Unlike hive bees, bumblebees do not live in large colonies and they are uncontrolled. Each colony of bumblebees is started in the spring by a female that has survived by hibernation and is broken up in the fall. These wild bees do not make honeycombs like those of hive bees but deposit their honey in a comparatively small number of more or less globular and irregularly arranged wax cells in nests on or a little below the surface of the soil. Although red clover is their favorite it is not their only source of nectar. Bumblebees are becoming scarcer with the extension of cultivation and the destruction of their nesting places, and scientists are trying to solve the problem of red clover fertilization by developing honeybees with longer tongues and red clover with shorter flowers.

Which is correct, *Chile* or *Chili*?

The name of the republic on the southern Pacific coast of South America is frequently but erroneously spelled *Chili* instead of *Chile*. *Chili* is the Italian spelling of the name, while *Chile* is the correct spelling in Chilean, Spanish, Portuguese, German and English. In many books printed a generation or more ago the name is spelled *Chili*. For instance, in *Astoria* (1836) Washington Irving wrote: "In Chili, Tucuman, and other parts, it [the introduction of the horse] has converted them, we are told, into Tartar-like tribes." Nobody knows definitely how Chile received its name or what the name means. A half-dozen or more derivations of *Chile* have been suggested, the most probable being that the term is from Quiche Indian *Tchili*, meaning "cold" or "snow" and alluding to the perpetual snow

of the high Andes in that region. The Anglicized pronunciation of the name is *CHILL*-ly, like the word *chilly*, but the correct Chilean and Spanish pronunciation is *CHEE*-lay. Chile is the most elongated country in the world. It is 2,627 miles long, has a coast line of 2,900 miles, varies in width from 105 to 223 miles, and has an area of 296,000 square miles—one-eighth of that of the United States proper. *Chile* in *chile con carne* had a different origin and has no connection with the name of the country. There the word, spelled also *chili* and *chilli*, is the Spanish name of the red pepper or fruit of the capsicum. Incidentally, confusion with this word may have given rise to *Chili* as the erroneous spelling of *Chile* as the name of the country. *Con carne* is Spanish for "with flesh," and *chili con carne* is a Mexican dish consisting of red peppers and minced meat, to which cereals and beans are sometimes added. Some authorities say that *chile con carne* did not originate in Mexico but among the Mexicans in the southwestern part of the United States.

How did April-fooling originate?

April 1 is unique in being the one day in the year dedicated to practical joking. *April* is believed to be derived from Latin *aperire*, "to open," and may have been applied to the fourth month by the Romans in allusion to its being the time of year when vegetation unfolds and nature renews life. Fooling friends and acquaintances on April 1 by playing practical jokes on them and sending them on foolish errands is an old custom. The victim of such a prank is called an April Fool and the day is known as All Fools' Day or April Fools' Day. This conception of April 1 was common in England already in the seventeenth century. In *Gnomologia*, Thomas Fuller (1608-1661) wrote: "The first day of April, you may send a fool whither you will." *Poor Robin's Almanac* for 1760 contained this rhyme:

The first of April some do say,
Is set apart for All-Fools' Day;
But why the people call it so
Nor I nor they themselves do know.

Many theories have been suggested to account for the origin of April-fooling, but none of them are very satisfactory. Similar festivities have been popular in different parts of the world for thousands of years. Practical jokes are played on friends by the Hindus on March 31, the last day of the Holi festival, and one of the chief features of the Holi is sending persons on fools' errands. The Romans

played burlesque tricks on February 17, the Feast of Fools (*festum stultorum*). This burlesque festival was revived during the Middle Ages and was sometimes celebrated even in the churches on New Year's Day. But, assuming that April-fooling is related to the fun making of these once almost universal festivals held near the spring equinox, the exact origin of April Fools' Day still remains inadequately explained. The English and Germans apparently borrowed the custom from the French, who call an April Fool *un poisson d'avril*, "an April fish," which may allude to the general voraciousness of fish in the spring—an April fish would be young and therefore easily caught—or to the fact that in that month the sun leaves the sign of the Fish in the zodiac. Perhaps the best explanation is that April-fooling in western Europe began with the change in the calendar in France in 1564. When the Gregorian took the place of the Julian calendar New Year's Day was changed from March 25 to January 1. Before that the New Year festivities lasted eight days, beginning March 25 and reaching their peak April 1, which was reserved especially for giving presents and making calls. Possibly the celebration on the old date degenerated into burlesque and mockery after the new date was adopted for real New Year. No importance can be attached to the suggestion that April-fooling was originally suggested by the medieval miracle plays, many of which showed Jesus being sent from Annas to Caiaphas, from Caiaphas to Pilate, from Pilate to Herod, and from Herod back to Pilate. In Latin America December 28 (Holy Innocents' Day) is All Fools' Day and is equivalent in some respects to our April Fools' Day.

Why is a regular dinner called *table d'hôte*?

Table d'hôte is a French phrase literally meaning "table of the host." During the Middle Ages, and even as late as the early part of the eighteenth century, restaurants and public eating places as we know them today did not exist in western Europe. No hotel, inn, tavern or boardinghouse was operated on what is now called the "European plan." Guests sat at the table of the host or landlord and ate whatever was offered without selection. There was no menu from which they could order *à la carte*, "according to the card" or bill of fare. Consequently they could not pay for each dish separately according to their wants, but had to pay for the entire meal whether or not they cared for all the courses. Thus *table d'hôte* came to signify a complete prearranged meal served in courses at regular hours and at a fixed price. While he was one of the American peace commission-

ers at Ghent, John Quincy Adams wrote in his diary under date of June 2, 1814: "I dined again at the table-d'hôte, at one." In those days no explanation of the term would have been necessary to the average traveler. In England such a meal was called an *ordinary*, a term also applied to the place where it was served. Fynes Moryson wrote in *An Itinerary* (1617) as follows: "Neither at this time was there any ordinarie Table (which they call *Table de l'hoste*, 'the host's table')." *Hotel* is of French origin and was not used in English for public eating and lodging places when Shakespeare wrote and when the King James Version of the Bible was made. Shakespeare placed scenes in the Garter Inn, the Boar's Head Tavern and the like, but never in the lobby or a room of a hotel. Likewise there was no room for Joseph and Mary "in the inn" at Bethlehem. In *Antony and Cleopatra* Shakespeare has Enobarbus say that Antony, when Cleopatra entertained him on her barge on the Cydnus, "for his *ordinary* pays his heart for what his eyes eat only." In Virginia small roadside inns and taverns were called ordinaries until the eighteenth century. Hotels of the modern type were not built in America until shortly before 1800. The Tremont House in Boston, opened in 1829, was the first American hotel in which guests were permitted to rent separate rooms and were not required to "double up" with strangers. A key for each room, gas lights, free soap and a washbowl and pitcher in each room were other innovations boasted by the Tremont House. The Palace, opened in San Francisco in 1875, proclaimed itself as America's "first luxury hotel." In 1940 the American Hotel Association reported 20,000 hotels with 1,750,000 guest rooms in the United States. California, with 3,572, ranked first in number of hotels, and New York, with 2,307, second.

What percentage of births are twins?

The exact proportion of multiple to single births seems to vary considerably in different parts of the world and at different periods, but statistical information is inadequate at present to make satisfactory comparisons of the frequency of multiple births in different countries or to determine whether the percentage of such births is increasing, decreasing or remaining about constant. Nature appears to have contemplated that the human mother should bear and nurse two children at a time, but for some reason the great majority of births are single. Birth registrations in leading countries indicate an average of one pair of twins to about every ninety births. In the United States the average is one pair of twins to about eighty-eight births.

About a third are twin boys, a third twin girls, and a third twin boys and girls. Twins are of the same sex in about five cases out of eight. Triplets occur once in about 8,800 births, quadruplets once in about 700,000, and quintuplets are so rare that only a few cases occur throughout the world in a century. One investigator estimated that the chances of a mother giving birth to quintuplets is only about one to 41,800,000. About 4,000,000 people in the United States were born twins. There is some evidence that the percentage of multiple births is slightly greater in Canada than in the United States and among American Indians than among whites. Many primitive peoples believe that twins possess magical powers over nature, such as the ability to control the rain and weather. Among some of the native tribes of Australia it used to be a practice when twins were born to kill one of them—usually the smaller and weaker one.

What element was discovered in the sun?

Helium is known as the "sun element" because it was discovered in the sun long before it was known to exist on the earth. In 1868 the French astronomer Pierre Janssen observed a brilliant yellow line in the solar atmosphere that he could not account for. Later in the same year Sir Joseph Norman Lockyer, astronomer, and Sir Edward Frankland, chemist, while observing an eclipse of the sun in India with a spectroscope, concluded that the brilliant yellow streak in the corona was a new solar element, which Lockyer named helium, from Greek *helios*, "sun." An American chemist named William F. Hillebrand in 1889 expelled some of the gas from the mineral uraninite without identifying it as helium. In 1894 the British chemist, Sir William Ramsay, seeking a new source of argon, treated cleveite, a crystallized variety of uraninite from Norway, with acid and found that the chief constituent of the gaseous mixture given off corresponded identically in the spectrum with the element detected in the sun, and he then proceeded to obtain the first pure helium ever isolated. Helium was later detected in certain stars and was found in the earth's atmosphere, meteorite iron, mineral waters and natural gases. At first it was mined, that is, it was obtained from uraninite and other minerals that were mined. In 1905 Dr. H. P. Cady, professor of chemistry at the University of Kansas, analyzed gas from a near-by oil well and found that it contained 1.87 percent of helium. Until shortly before the First World War, helium was little more than a laboratory curiosity that sold for \$2,500 a cubic foot. The new element proved to be of prime importance to aeronautics because it is non-

inflammable and second only to hydrogen in lightness. It is noninflammable because it is strictly "unsocial" and, unlike hydrogen, will not combine with other elements. The first dirigible balloon was inflated with helium in 1917. Helium is the only element that does not solidify when subjected to temperatures approaching absolute zero. The chief source of commercial helium now is natural gases found almost exclusively in Texas and Oklahoma, which gives the United States a virtual monopoly of the element. By 1940 it was being produced in a government plant near Amarillo, Texas, at a rate of twenty-four million cubic feet a year and at a cost of only about one cent a cubic foot. One cubic foot of helium will lift slightly more than an ounce. This element occurs in the air in the proportion of about one part of helium to 250,000 parts of atmosphere, but no commercially practical process for extracting atmospheric helium has yet been developed. More than two trillion cubic feet of air would have to be treated to obtain enough helium to inflate a dirigible airship of average size. The lifting power of ordinary helium is about 93 percent as great as that of hydrogen. A rare form of lightweight hydrogen in the atmosphere has a lifting power nearly 3 percent greater. Helium is now used for many other purposes—to inflate airplane tires, in "breathing mixtures" for treating asthma and other respiratory diseases, as a synthetic atmosphere in diving bells, as a protecting atmosphere in welding torches and as a "tracer gas" in mineral explorations.

Do people ever have a third set of natural teeth?

Cases of persons who have cut a third partial or complete set of natural teeth are often reported. The accuracy of these reports is generally doubted by dental scientists, who believe that most of them refer to teeth that really belong to the second set. The theory is that these teeth failed to emerge at the normal time and remained imbedded in the gums until they appeared late in life when there was sufficient room and when the jaw had atrophied. This theory probably explains a great many of the cases of "third dentition" reported. It is doubtful that a third complete set of natural teeth ever occurs in the strict sense of the term. If it does it must be exceedingly rare. The United States Naval Medical School says it knows of no authentic case, and eminent dental authorities say that investigation invariably points to the conclusion that cases of so-called third dentition consist of one or more supernumerary teeth. But there are those who believe there have been authentic cases of third

dentition. In *Folklore of the Teeth* (1928) Dr. Leo Kenner gives the following summary of the subject: "Speaking of the anomalies of eruption, we must mention further the belief that the cutting of the deciduous teeth is followed occasionally by a third dentition which may appear in very old age. Third dentition, described quite often by the older writers on dentistry, was discredited for some time by Scheff and by Busch, who denied its occurrence emphatically and declared that whenever one had one or more teeth come through in older age it was delayed second dentition. But since in more modern time Montigel and Kerstig have been able to prove roentgenologically the rightfulness of the older authors' conception and have found at least two undoubted cases of third dentition, we have to believe in its existence."

Who was Mrs. Partington?

Everybody has heard of Mrs. Partington, but few know who she was. She bobs up at one time as an old lady trying to hold the ocean back with a mop and at another as the author of quaint and witty sayings. Mrs. Partington, according to a popular story, was an old lady who lived in a cottage on the beach at Sidmouth in Devonshire, England. During a great storm in 1824 she tried to keep the high tide out of her house with a mop. She failed to stem the torrent and was compelled to take refuge in the attic. Hence those who attempt the impossible or the obviously futile are compared to Mrs. Partington and her mop. Whether there was actually such a person as Mrs. Partington is doubtful. She was probably created especially for the anecdote. Like Mrs. Grundy, she has no first name. Sydney Smith popularized the story when in an address delivered at Taunton in 1831 he drew a comparison between the rejection of the Reform Bill by the House of Lords and Dame Partington's efforts to keep back the Atlantic. "I do not mean to be disrespectful," said the speaker, "but the attempt of the Lords to stop the progress of reform, reminds me very forcefully of the great storm of Sidmouth, and of the conduct of the excellent Mrs. Partington on that occasion. In the winter of 1824, there set in a great flood upon the town—and everything was threatened with destruction. In the midst of this sublime and terrible storm, Dame Partington, who lived upon the beach, was seen at the door of her house with mop and pattens, trundling her mop, squeezing out the sea water, and vigorously pushing away the Atlantic Ocean. The Atlantic was roused. Mrs. Partington's spirit was up; but I need not tell you that the contest was unequal. The Atlantic

Ocean beat Mrs. Partington. She was excellent at a slop or a puddle, but she should not have meddled with a tempest." In 1847 Benjamin Penhallow Shillaber (1814-1890), a printer on the *Boston Post*, set up an anonymous squib in the paper in which an imaginary old lady named Mrs. Partington was reputed to have said that it "made no difference to her whether flour was dear or cheap, as she always had to pay just so much for a half-dollar's worth." The witticism made such a popular hit that Shillaber almost overnight became the most famous American humorist. The sayings and doings of Mrs. Partington continued to be published in the *Boston Post* for several years, and they were resumed in the *Carpet-Bag*, a humorous weekly that Shillaber began to edit in 1851. In 1854 the author published a book entitled *Life and Sayings of Mrs. Partington*. Mrs. Partington was portrayed in these sketches as an old lady of amusing affectations, a sort of Mrs. Malaprop, who makes all kinds of laughable mistakes and ridiculous blunders in the use of words. The only connection between Shillaber's Mrs. Partington and the old lady who tried to hold back the sea with a mop is the name.

Will drinking blood make a person fierce?

There seems to be no scientific basis for the old belief that drinking blood will make men and dogs fierce and ferocious. Shakespeare alludes to this belief in *Hamlet* when he has the Prince of Denmark, prepared to "speak daggers" to his unnatural mother, say: "Now could I drink hot blood, and do such bitter business as the day would quake to look on." *The Book of Mormon* (1830) says: "They loved murder and would drink the blood of beasts." The Kentucky settlers in the time of Daniel Boone were credited with feeding dead Indians to their dogs "to make them fierce." Another backwoods notion was that dogs would be made fierce by feeding them gunpowder. Popular writers frequently refer to the alleged fact that pirates and other outlaws in the days of the Spanish Main were wont to drink blood seasoned with gunpowder to give them brute courage. Gunpowder mixed with rum or brandy is a courage-giving concoction drunk by soldiers before going into battle, according to another popular belief preserved chiefly in the yarns told by veterans to entertain the credulous. It is said that the voodooists in Haiti formerly assembled around an altar in the woods at midnight to sacrifice a pig. The worshipers caught the blood of the animal in gourds, added rum and gunpowder and then drank the mixture. Blood and gunpowder are only the symbols rather than the cause of cruelty and ferocity. A person

eager for bloodshed is said to be "bloodthirsty." When the Tartar soldiers of Genghis Khan ran out of food they opened the veins in their horses, drank some of the blood and then sealed the veins.

Who said: "I care little who makes a nation's laws if I have the making of its ballads"?

This is the popular version of a passage in *An Account of a Conversation Concerning a Right Regulation of Government for the Common Good of Mankind*, which was issued anonymously in 1704 by Andrew Fletcher of Saltoun (1655-1716), Scottish politician and political writer. This treatise, addressed to the Marquis of Montrose and the earls of Rothes, Roxburg and Haddington, related an imaginary conversation between Fletcher on the one hand and the Earl of Cromarty, Sir Edward Seymour and Sir Christopher Musgrave on the other. The essay contains the following:

Even the poorer sort of both sexes are daily tempted to all manner of lewdness by infamous ballads, sung in every corner of the streets. One would think, said the Earl, this last were of no great consequence. I said, I knew a *very wise man*, so much of Sir Christopher's sentiments, that he believed if a man were permitted to make all the ballads, he need not care who should make the laws of a nation. And we find, that most of the ancient legislators thought they could not well reform the manners of any city without the help of a lyric, and sometimes of a dramatic poet.

This is all that is positively known about the origin of the oft-quoted and misquoted saying, "I care little who makes a nation's laws if I have the making of its ballads." There has been much speculation as to the identity of the person alluded to by Fletcher as "a very wise man." Some have supposed him to be George Mackenzie, first Earl of Cromarty (1630-1714), Scottish statesman and writer; but that could hardly be, for the reason that Fletcher includes Cromarty among those engaged in the imaginary conversation. Others have guessed the "very wise man" to be John Selden (1584-1654), English scholar and antiquarian. Perhaps Fletcher had no particular person in mind and merely employed this method of introducing his own idea. Several modern writers have ascribed the famous quotation to Confucius, the Chinese sage, who lived from 551 to 478 B.C. Herbert A. Giles, professor of Chinese at Cambridge University, made the following statement in *A History of Chinese Literature*, published in 1901: "Confucius may indeed be said to have anticipated the apothegm attributed by Fletcher of Saltoun to a *very wise man*, namely, that he who

should be allowed to make a nation's *ballads need care little who makes its laws.*" Lord Northcliffe and Samuel S. McClure went even further in *The World's Greatest Books*, published in 1910. In Volume 13 they give the famous quotation as one of the general maxims of Confucius. These editors apparently were misled by what Giles had written. Other writers quote the Chinese sage as having said: "Show me the music of a nation and I will tell you how it is governed." There is nothing in the *Analects* of Confucius or the other Chinese classics that would justify attributing the exact words of the quotation to the great sage. That Confucius emphasized the importance of ballads is a well-known fact, and the world is indebted chiefly to him for the preservation of the *Book of Odes*. In the *Book of Rites* Confucius wrote: "Music produces a kind of pleasure that human nature cannot do without." On one occasion, it is recorded, Confucius told his son that until he learned the Odes he would be unfit for the society of intellectual men. Although Confucius so far as known never made any assertion that could be legitimately translated in the words of the quotation in dispute, Chinese scholars say that the quotation does in a general way sum up the great importance that the sage of China attached to the study of ballads and odes. Perhaps Mencius (Meng Ko), who ranks second only to Confucius as a Chinese sage, should be regarded as the author of the thought expressed by the quotation. He lived from 372 to about 288 B.C. and in his later years was known as *Meng-tse*, "the Master Meng." In his *Discourses* he said: "If the king loves music, there is little wrong in the land."

Where is Llanfairpwllgwyngyllgogerychwyrndrobwlilllantisiliogogoch?

This word of fifty-eight letters and nineteen syllables is the name of a village and vacation resort on the island of Anglesey in northern Wales. The name is generally written Llanfairpwllgwyngyll or Llanfair P.G. for convenience. According to the Welsh alphabet the word contains only fifty-one letters, because *ch* and *ll* are regarded as single letters. The English spelling of the name varies somewhat because in certain cases the same letters are not always used to represent the sounds. Sir John Morris Jones, a native of Anglesey and professor of Welsh at Bangor University in Wales, said the name means "Mary Church of the Pool of White Hazels Rather Near the Swift Whirlpool of the Church of Tysilio of the Red Cave." On March 4, 1931, Senator James J. Davis, of Pennsylvania, a native of Wales, declared that

ceremonies on St. David's day were held in his native country "from Llanfairpwllgwyngyllgogerychwyrndrobwl'llantysiliogogogoch in the north to Pontllanfraith in the south." Although Senator Davis pronounced the fifty-eight-letter word without hesitation or tongue-tripping, Theodore F. Shuey, veteran official reporter, said the word was the most difficult he had encountered in his sixty-three years in the Senate.

What is the Rosetta stone?

The Rosetta stone is a black basalt slab containing inscriptions in three ancient languages and famous because it provided the key that unlocked the mystery of ancient Egyptian hieroglyphics. It received its name from having been accidentally found in a stone wall in 1799 by Lieutenant André Bousard, one of Napoleon's engineering officers, while excavating for a redoubt at Fort St. Julien, four miles from Rosetta, a town at the western mouth of the Nile in the delta of Lower Egypt about thirty-six miles northeast of Alexandria. The French officer suspected the archaeological value of the stone and had it removed to the home of General Menou, where it remained until 1801, when Napoleon ordered it placed in the institute he had founded at Cairo. A turn in the tide of naval and military affairs in Egypt resulted in the capitulation of the French to the British in 1801 and the Rosetta stone became the possession of the latter by Article XVI of the treaty. It was landed at Portsmouth in February, 1802, and eventually was placed in the British Museum. Originally this stele or engraved stone was about 4 feet long, more than 2½ feet wide and 11 inches thick, but small parts of it have been chipped off and lost. The inscriptions are in ancient Egyptian hieroglyphics, in the Egyptian vernacular of two centuries B.C. and in Greek. *Hieroglyphic* is from Greek *hieros*, "holy," and *glyphein*, "to carve," and literally signifies "sacred carving." The Egyptians used hieroglyphics or picture writing in state and ceremonial documents. The ancient Egyptian vernacular, from which Coptic evolved, is known as demotic. It was an ideographic script of which the symbols had lost their pictorial character and had become letters. From the Greek it was learned that the subject matter of all three inscriptions on the Rosetta stone was the same and one could be regarded as a translation of the others. Up to that time the civilization of ancient Egypt had been mute because nobody had been able to decipher the hieroglyphics. All inscriptions on monuments and in tombs in Egypt were meaningless to scientists. Hieroglyphics had been a dead language for more than 1,400

years and little was known of the history of ancient Egypt except what was learned from Greek, Roman and Hebrew writers. Dr. Thomas Young, a British scientist, was the first to assign phonetic values to the characters in the hieroglyphics on the Rosetta stone. In 1818 he succeeded in deciphering the names Ptolemy and Cleopatra but was unable to go any farther. It remained for Jean François Champollion (1790-1832), a young French scholar who became the founder of Egyptology, to find in the Rosetta stone the key that enabled him to translate the hieroglyphics and unlock the sealed doors to the treasure house of Egyptian history. By comparing the triplicate inscriptions on the stone with one another as well as with Coptic, Champollion deduced the value of several characters of the hieroglyphics. After fourteen years of work he was able to convince the world that he had regained the lost language of ancient Egypt. The subject matter of the inscriptions was not important. It consists of a memorial drawn up by the synod of priests at Memphis about 195 B.C. and praises Ptolemy V (Epiphanes) for his kindness in remitting certain taxes and dues owed by the priesthood and then in arrears. In return the priests decreed that an image and golden shrine be erected in honor of the Greek monarch in various temples. It is believed that the Rosetta stone originally stood in the temple dedicated to Atum, the sun-god, by Necho II of the Twenty-sixth Dynasty. The decree inscribed on the Rosetta stone provided that several tablets so inscribed should be erected, but this is the only one known to exist. Egyptologists are hopeful that four steles unearthed near Rosetta in 1938 will throw further light on the subject.

What is a smock marriage?

A smock marriage is a wedding ceremony at which the bride wears nothing but a smock, the old name for the woman's intimate garment later commonly called shift or chemise. At one time it was widely believed in England and New England that if a man married a woman in debt he was not liable to her creditors if he received her from the minister or magistrate without any of her property, including clothing. This was a popular interpretation of the common-law principle that a man was not responsible for any debts contracted by his wife previously to her marriage unless he received property with her. Modesty compelled those complying with the smock-marriage custom to resort to various expedients. Sometimes the bride stood unclothed in a closet and put one arm out during the wedding ceremony. At other times the bride would be wrapped only in a sheet or dressed in a smock that

had been purchased by the bridegroom. Records of Lincoln County, Maine, show that John Gatchell and Sarah Cloutman were married November 21, 1767. "Said Cloutman being in debt," attested the justice of the peace, "was desirous of being married with no more clothes on her than her shift, which was granted." Again the bridegroom might provide the bride with a complete wedding outfit in which he retained title. William Balch, "Minister of Ye Gospel," signed the following statement at Bradford, Massachusetts, "Dec. ye 24, 1733": "This may certifie whomsoever it may concerne that James Bailey of Bradford who was married to the widow Mary Bacon, Nov. 22 last past by me ye subscriber then Declared that he took the said person without anything of Estate and that Lydia, the wife of Eliazer Burbank and Mary, the wife of Thomas Stickney and Margaret, the wife of Caleb Burbank, all of Bradford, were witnesses that the clothes she then had on were of his providing and bestowing upon her." Actually smock marriages appear to have been unnecessary legal subterfuges. Francis Wharton (1820-1889), eminent American jurist and legal authority, wrote: "There is a popular belief that a man who marries a woman in debt, absolves himself from all liability if he take her from the hands of the priest clothed only in her shift. It is a vulgar error." Plutarch says that Solon forbade dowries to be given in certain marriages, "the wife was to have three suits of clothes, a little considerable household stuff, and that was all, for he would not have marriages contracted for gain or an estate, but for pure love, kind affection, and birth of children."

What was Tom Thumb's real name?

The real name of Tom Thumb, perhaps the most famous midget who has ever lived, was Charles Sherwood Stratton. A midget is a person who, owing supposedly to faulty glands, virtually stops growing at a certain point in childhood but who is otherwise normal. Stratton was a true midget, not a dwarf. He was born at Bridgeport, Connecticut, in 1838 and weighed 9½ pounds at birth. He was the third of four children of a carpenter. All the other members of the family were normal in stature. Charles Stratton virtually stopped growing when about six months of age and remained about twenty-five inches in height and fifteen pounds in weight until he entered his teens. In later life he attained a height of forty inches and a weight of seventy pounds. His father, a New England Puritan, looked upon the fact that his son was a midget as evidence of God's displeasure and kept the boy confined at home. When the midget was four years old

P. T. Barnum, the showman, also of Bridgeport, engaged him for exhibition purposes and changed his name to Tom Thumb. This name was not original with Barnum. It was suggested by the name of a legendary pygmy of King Arthur's court. An old nursery rhyme begins, "In Arthur's court Tom Thumb did live." In 1621 a writer named Johnson published *The History of Tom Thumb*, and *Tom Thumb* was the title of a play written in 1730 by Henry Fielding. The first railway steam locomotive built in America, made in Baltimore by Peter Cooper in 1830, was named the Tom Thumb. Barnum at first paid the midget's parents three dollars a week for the services of their son. It is estimated that Tom Thumb had made Barnum a quarter of a million dollars when he raised the midget's wages to \$50 a week. Barnum took Tom Thumb to England in 1844 when the midget was only six years old. By exhibiting him in foreign countries and presenting him to royalty and nobility in Europe, Barnum made him the most famous midget in the world. His charm and wit captivated audiences everywhere, and Queen Victoria, who enjoyed conversing with him as he sat on her footstool, bestowed on him the title "general." At least that was Barnum's story. Under date of April 13, 1847, President James K. Polk wrote in his diary: "About two o'clock P.M. it was announced to me that General Tom Thumb, a dwarf, who is being exhibited in this city and who has become quite celebrated by having been exhibited at all the principal courts of Europe, was in the parlour below stairs and desired to see me. I invited the Cabinet to take a short recess and to walk down with me, and they did so. We found a number of ladies and gentlemen in the parlour. Tom Thumb is a most remarkable person. After spending twenty or thirty mintues in the parlour I returned with the Cabinet to my office." In 1863, when General Tom Thumb was twenty-five years old, weighed twenty-one pounds and was thirty-two inches tall he was married to another midget in Barnum's troupe, Mercy Lavinia Warren Bumpus (1841-1919), who then weighed twenty-nine pounds and was about the same height as the general. On their honeymoon, supervised and publicized by Barnum, the midget couple was received at the White House by President and Mrs. Lincoln. The newspapers made so much ado about the event that the Civil War was almost forgotten. Lincoln told the midget that he was now the center of attraction and had thrown the president himself completely in the shade. When the president asked the general, as a military man, his opinion of the war, the midget replied that "My friend Barnum would settle the whole affair in a month." The only child of Tom and Lavinia, a daugh-

ter, died in infancy, but Barnum, notorious for humbug, continued to hire babies to be exhibited as the offspring of the famous midget pair. General Tom Thumb continued to travel intermittently under Barnum's and his own management. At forty he retired and lived in considerable luxury until his death from apoplexy at Middleboro, Massachusetts, in 1883, at the age of 45. His widow married Count Primo Magri, an Italian midget with a papal title, and together they continued in the show business. *Tom Thumb* is now used as a generic term for any midget or dwarf, and is sometimes applied figuratively to an insignificant person. In *A Rhymed Lesson*, Oliver Wendell Holmes, alluding to Barnum's brazen publicity, wrote:

The "real, genuine, no-mistake Tom Thumbs"
Are little people fed on great men's crumbs.

Why is a patrol wagon or prison van called a Black Maria?

Black Maria, the vernacular name of an enclosed vehicle in which arrested persons are given a free ride to jail, is of unknown origin. The term is common to both Great Britain and America and it is not known on which side of the Atlantic it originated. It appears that this name for a police patrol wagon or a prison van made its appearance in the first half of the nineteenth century. Many stories have been told to account for its origin; the most generally accepted of these being as follows: A Negro woman named Maria Lee but familiarly called Black Maria kept a seamen's boardinghouse in Boston in the early years of the nineteenth century. She was a large, strong and fearless woman who frequently aided the officers in overpowering obstreperous sailors and packing them off to jail. When trouble broke out in the neighborhood the natural thing to do was to send for Black Maria. She became such a common figure in these unpleasant episodes that her nickname became attached to the black wagon employed by the officers in carrying away offenders. This story, like several others seeking to explain the same term, is entirely without etymological support and may have been made up out of whole cloth. Patrol wagons and prison vans at one time were almost universally painted black. They are still called Black Marias regardless of their color.

How did poppies become associated with the First World War?

In Roman mythology the red poppy was the symbol of death and was dedicated to Somnus, the god of sleep. This plant, though closely related, is not the same species as the white poppy of the Near East and the Orient, from the capsules of which opium and other powerful

drugs are extracted in commercial quantities. For centuries the red poppy, which grows wild in Europe and which is cultivated as an ornamental garden flower and as a field plant for the oil yielded by its seeds, has been associated with the battlefields of western Europe, especially in Flanders, where it grows as a pest in the wheat and uncultivated fields. Poppies grew luxuriant on the battlefields of this region simply because such fields were torn up and then neglected for a season or two. Superstitious people believed the red flowers symbolized the blood of the slain. Contemporary writers refer to the profusion of poppies that sprang up on the battlefields of Landen, Ramillies, Malplaquet, Fontenoy and Waterloo. In 1693 the French under Marshal Luxembourg defeated the Anglo-Dutch under William III at Landen. Macaulay, in his history of England, wrote of this battlefield: "During many months the ground was strewn with skulls and bones of men and horses, and with fragments of hats and shoes, saddles and holsters. The next summer the soil, fertilized by twenty thousand corpses, broke forth into millions of poppies. The traveler who, on the road from Saint Tron to Tirlemont, saw that vast sheet of rich scarlet spreading from Landen to Neerwinden, could hardly help fancying that the figurative prediction of the Hebrew prophet was literally accomplished, and that the earth was disclosing her blood, and refusing to cover the slain." After the First World War both the British Legion and the American Legion adopted the Flanders poppy as their symbol. The British Legion, the veterans' organization in Great Britain corresponding to the American Legion in the United States, began to operate a factory at Richmond for making artificial poppies to be sold on Armistice Day to raise funds for welfare and relief work. In the United States the official flower of the American Legion is widely worn on Memorial Day—May 30—which by reason of this fact is sometimes called Poppy Day. In 1922 the Veterans of Foreign Wars started the custom of selling "buddy poppies," artificial flowers made exclusively by disabled veterans. The peculiar association of the red poppy with the battlefields of the First World War was largely the result of the popular poem by Colonel John McCrae, Canadian physician, soldier and poet, who died of pneumonia in France in 1918. *In Flanders Fields* was penciled on a page torn from a dispatch book by Colonel McCrae during a lull in the sixteen days of fighting known as the Second Battle of Ypres. The poet submitted it anonymously to London *Punch*, and the editor, recognizing the beauty and merit of the poem, printed it in the issue of December 9, 1915, in a heavy-leaded type reserved for matter of dis-

tion. Colonel McCrae was buried in the British military quarter of Wimereaux Communal Cemetery on the French Channel coast. The original manuscript is owned by the Royal Victoria Hospital in Montreal, where the author practiced medicine before the war. The complete poem follows:

In Flanders fields the poppies grow
Between the crosses, row on row,
That mark our place; and in the sky
The larks, still bravely singing, fly
Scarce heard amid the guns below.

We are the Dead. Short days ago
We lived, felt dawn, saw sunset glow,
Loved, and were loved, and now we lie,
In Flanders fields.

Take up our quarrel with the foe;
To you from failing hands we throw
The torch; be yours to hold it high!
If ye break faith with us who die
We shall not sleep, though poppies grow
In Flanders fields.

Why was Ethelred II called "the Unready"?

Most people naturally assume that Ethelred II, king of England from 978 to 1016 and father of Edward the Confessor, was known as "the Unready" because he was unprepared for war. The curious alliterative epithet originally had no such meaning, and it seems that Ethelred the Unready has been the victim of an injustice at the hands of history because of the corruption of a word. King Ethelred II had his faults, but they were of a different sort. *Unready* in this connection is merely a variant of *unredy* or *unrede*, formed from *un*, "not," and *rede*, "counsel," and literally meaning "redeless" or without counsel or advice. In *Hamlet* Ophelia refers to "a puff'd and reckless libertine" who "recks not his own rede." In olden times the epithet "the unrede" was applied to a person who disregarded counsel and who in consequence was lacking in judgment and given to folly. Ethelred the Unready was so called because he ignored the *rede* or advice of the great Anglo-Saxon national council known as the witenagemot and accordingly was rash and ill advised in action and too ready to fight on his own account. In other words, the king preferred his own judgment to that of his lawful Parliament. The Oxford dictionary says *unready* in this

ancient sense survives only in the Anglo-Saxon king's historic epithet. Because of internal bickering and lack of national unity, the reign of King Ethelred II was a continual series of disasters. Time after time the king was compelled to pay tribute to the Norsemen to get them to cease plundering and pillaging England. He collected the largest fleet ever assembled by England up to that time, but his vast preparation against the Norsemen was ineffective because of a futile court quarrel. After living in exile in Normandy for a time, Ethelred the Unready was given another chance as king, but only after promising Parliament he would pay more attention to its "rede" in the future.

Of what country is the watermelon native?

The watermelon, a member of the cucumber family, is believed to be a native of tropical Africa, where it still grows wild and whence it was carried to India, northern Africa, southern Europe and southwestern Asia. David Livingstone, the Scotch missionary and explorer, called the watermelon vine the most surprising plant found in the deserts of southern Africa. In 1857 he reported that districts in the Kalahari Desert were covered with the vines. Apparently some of the melons were sweet and others bitter, for he observed that the natives as well as all sorts of mammals were fond of those varieties that produce sweet fruit. The Negro seems to have acquired his decided fondness for the watermelon in the land of his and its origin. That watermelons were grown by the ancient Egyptians is proved by paintings as well as carvings on monuments dating back to the time when the Pyramids were built. This vine was introduced into India perhaps 2,000 years ago and it has a name in Sanskrit. It appears to have been introduced into China as early as the tenth century A.D. Neither the ancient Greeks nor the Romans had a name for it and it was probably not known to them. Some authorities suppose that the Portuguese in the fifteenth century found the watermelon growing along the African coast and introduced it into their colonies in Brazil. The Indians knew a good thing when they saw it and the cultivation of the watermelon spread rapidly in the New World. This fact has led some writers to suppose that the watermelon had an American origin and that it was originated by the Mayans. The fruit was probably introduced into England sometime in the sixteenth century. According to Master Graves, it abounded in Massachusetts in 1629, only nine years after the landing of the Pilgrims. The North American Indians lost little time in adding the watermelon to their list of cultivated plants. In 1664 the Florida Indians were cultivating it in their

cornfields, and nine years later Father Marquette found among the western tribes melons that "are excellent, especially those with a red seed." In 1775 George Washington sent workmen to his lands in the Ohio country to plant corn and "Water-Mellon seed—Cucumbers—& every Kind of Seed." His diary for 1788 refers to planting, replanting and weeding watermelons. The tribes on the Colorado were growing watermelons before Washington's death. Indians, like Negroes, became fond of the fruit and the vine was spread quickly to all parts of the continent because of the ease with which the seeds can be carried and planted. Watermelons are now grown in the southern part of the United States to a greater extent than anywhere else in the world. Short-season watermelons grown in Ontario are regarded as among the most delicious. Commercial watermelons range in weight from "midget melons" of two pounds to "mammoth melons" of nearly two hundred pounds. W. C. Brown, of Oakland, Texas, acquired the epithet "the Watermelon Wizard" because he regularly grew watermelons ranging in weight from eighty to a hundred pounds. Watermelons, which are rich in vitamin C, contain about 37.5 percent of water. The water in the edible part, however, amounts to 92.4 per cent. The watermelon is said to be the only important fruit or vegetable from which no by-products are obtained, although the rind is pickled and in the Orient the seeds are eaten. For many years horticulturists have tried to develop a seedless watermelon that can be propagated commercially. In 1939 it was reported that a Chinese scientist named Cheong-yin Wong at Michigan State College had produced, by treating the unpollinated flowers of the small northern variety with naphthalene acetic acid, a seedless watermelon that could be grown in greenhouses if not in the open field.

Why does the lord chancellor sit on a woolsack?

• During the reign of Queen Elizabeth, when wool was one of England's chief sources of wealth, Parliament passed an act prohibiting the export of that commodity. At that time the high judges of the realm were provided with sacks of wool as seats so that they might be constantly reminded of the dependence of the country on the woollen industry. The lord chancellor, head of the chancery division of the high court of justice and president of the House of Lords, at the same time was given a seat consisting of a large, rectangular bag of wool covered with red cloth. It resembles a cushioned ottoman or divan, without back or arms, and stands almost in the center of the hall in front of the magnificent and canopied thrones of the king and queen.

As early as 1577 the office of the lord chancellor was referred to as "the woolsack." To this day the same type of seat is used by the lord chancellor when he presides over the House of Lords. A new lord chancellor is said to be appointed "to the woolsack." In 1938 the head of the British wool industry learned that the famous seat of the lord chancellor was stuffed not with wool but with horsehair. Sometime, nobody knows when, the wool had been removed and horsehair substituted. The head of the wool industry requested and was granted permission to have the horsehair removed and replaced with wool from Australia, New Zealand and South Africa. Red, originally the distinctive color of the official robes of Christian princes, is the royal color of England, and the throne, the seats in the House of Lords and the decorations in the House of Commons are all of that color.

How did the thistle become the emblem of Scotland?

Tradition says the thistle became the national emblem of Scotland as the result of an incident during the wars between the Scots and the Danes. Just when the incident occurred is not known for certain. Some writers place it in the eighth century, while others place it about 1010 during the reign of Malcolm II. The Danes, it is believed, were finally driven out of Scotland in 1040, about the time Duncan I was murdered by his kinsman Macbeth, who seized the throne and reigned about sixteen years. According to the most usual version of the legend, the Danes planned a surprise night attack on Sterling or some other castle, but the sleeping Scots within the castle were suddenly aroused and warned of the attack when a member of the Danish advance guard, creeping along noiselessly because barefooted, stepped on a thistle in the moat and uttered a cry of pain. A modification of this legend ascribes the thistle incident to the thirteenth century when King Haakon IV of Norway invaded Scotland and was defeated in 1263 by King Alexander III of Scotland at the Battle of Largs on the River Clyde. Whether or not the legend is true, the thistle as the heraldic emblem and seal of Scotland is very ancient. The thistle figures prominently in the Scottish order known as the Most Ancient and Most Noble Order of the Thistle, which among British orders of knighthood ranks second only to the Order of the Garter and the membership of which is restricted to royalty, princes of the blood and sixteen knights. *Nemo me impune lacessit*, "Nobody attacks me with impunity," is the motto of Scotland as well as of the Order of the Thistle. Tradition says the order was founded in 787 by King Achaius of Scotland in commemoration of a bright cross

he and his ally, King Hungus of the Picts, saw in the sky the night before a victory over the English under Athelstan. If this tradition is true then it is one of the oldest orders of knighthood in the world. It appears to have been refounded in 1540 by James V of Scotland, restored in 1687 by James II of England and Scotland only to collapse in the revolution the following year, and established once more by Queen Anne in 1703. Throughout its long history it has remained a distinctively Scottish order of knighthood. Although there is a prickly plant known as the Scotch thistle, the species of plant represented in the seal of Scotland and the insignia of the order—a collar of three golden thistles—has never been positively identified. The thistle family is the largest of all plant families and includes about a tenth of all flowering plants. The so-called Russian thistle, a common pest in western Canada, is not a true thistle, but a tumbleweed of the goosefoot family. Canada thistles, which were naturalized in America from Europe, are called creeping thistles in the Old World.

What famous reformer threw an inkstand at the devil?

After Martin Luther appeared at the Diet of Worms in 1521 his friends feared that his safe-conduct would be violated and that he would be seized and punished as a heretic. Therefore his protector, Frederick III, Elector of Saxony, had the monk secretly conveyed to the Wartburg, a historic castle at Eisenach. This protective imprisonment lasted for about ten months and Luther took advantage of it to translate the New Testament into German. During this work he fancied that Satan continually appeared before him. The monk, however, refused to desist from his sacred task. According to a legend, one day when Satan appeared Luther became so incensed that he seized his inkstand and hurled it at the intruder. The apparition disappeared and the missile was dashed to pieces against the wall of the castle. In his *History of the Reformation*, published between 1835 and 1853, Jean Henri d'Aubigné says: "The keeper of the Wartburg is still careful to call the traveler's attention to the spots made by Luther's inkstand." Such is the case at the present time, and there is reason to believe that fresh ink is occasionally applied to the spot for the benefit of visitors at the Wartburg. Naturally enough, the legend has many refinements and elaborations. According to one version, the devil appeared in the form of a fly, which continually buzzed around the monk's head and so annoyed him that he could not work. The insect vanished after Luther flung his inkstand at it and the ink was splashed

on the wall. Another version has it that the wall opened and Satan presented himself as a hideous giant, who pointed his finger at the monk in a threatening manner and gnashed his teeth furiously. When Luther reached for his inkstand Satan was too quick for him. The wall closed behind the giant and received the contents of the ink bottle. While Luther was translating Deuteronomy he had several sheep killed, and a butcher named to him the various parts of the animal referred to in the Law of Moses.

How did the checkoff system originate?

Checkoff was originally applied in the coal-mining industry to a system whereby the operators made deductions from the wages of employees for sharpening tools, house rent, professional fees and merchandise bought in company stores. This system originated in the British coal fields and was at the time considered peculiarly adapted to that industry. Coal, particularly bituminous coal, is generally produced in isolated communities where the miners and their families are largely dependent on facilities provided by the mine owners. In course of time *checkoff* was extended to include the system by means of which an employer, by agreement with a trade union, deducted union fees, fines and assessments from the wages of the workers on pay-day and turned them over directly to the officers of the union. For instance, suppose a union required each of its members to pay one dollar a month in dues. Under the checkoff system the employer deducts that amount from the employee's monthly pay check and turns it over to the union. Until about 1930 the checkoff system was not widely adopted except in the soft-coal industry. The Alaska Fishermen's Union was one of the first unions outside the coal industry to use the system. In 1929 Seattle adopted it for its streetcar system. Union leaders favored the checkoff because it solidified and strengthened their organization by insuring prompt payment of dues, and the soft-coal operators who employ union labor exclusively accepted it because it aided the unions to live up to their contracts and to discipline recalcitrant members.

Who is Mrs. Grundy?

Mrs. Grundy is an imaginary person who represents the composite opinion of our neighbors. She personifies social propriety and is a very proper and conventional lady who turns up her nose at the slightest violation of etiquette as she understands it. Those who make a practice of "keeping up with the Joneses" are especially careful to observe her

dictates. "The tyranny of Mrs. Grundy," wrote Herbert Spencer, "is worse than any other tyranny we suffer under." Mrs. Grundy (she has no first name) was created by Thomas Morton in a play entitled *Speed the Plough*, originally produced in 1798 at Covent Garden, London. She does not appear bodily on the stage as a character in the play, but Farmer Ashfield's wife continually refers to the social pretensions of the Grundys. Dame Ashfield's conversation is interlarded with cattish comments such as: "Farmer Grundy's wheat brought five shillings a quarter more than ours did. . . . Dame Grundy's butter was quite the crack of the market. . . . I wonder, Tummas [her husband], what Mrs. Grundy will say? . . . The Miss Grundys, genteel as they think themselves, would be glad to snap at him. . . . I'll go to church in a stuff one—and let Mrs. Grundy turn up her nose as much as she please." This eternal harping on Mrs. Grundy and her affairs gets on Farmer Ashfield's nerves. "Be quiet, woolye?" he growls, "aleways ding, dinging Dame Grundy into my ears—what will Mrs. Grundy say? What will Mrs. Grundy think?" His spouse denies she envies Mrs. Grundy. "Why dant thee let her aloane then?" the farmer demands. "I do verily think when thee goest to t'other world, the virst question thee't ax'll be, if Mrs. Grundy's there." But Dame Ashfield brings up the subject again: "Oh, Tummas, had you seen how Mrs. Grundy looked!" "Dom Mrs. Grundy," snaps the exasperated husband. From this obscure play, in which she is not even one of the characters on the stage, Mrs. Grundy stepped into a position of power and influence in the English-speaking world and people are still fearful of what she may say or think about their actions. Morton, creator of Mrs. Grundy, also (in *A Cure for the Heartache*, 1797) gave us, "Approbation from Sir Hubert Stanley is praise indeed," which is popularly shortened into, "Praise from Sir Hubert is praise indeed."

What part of Illinois is west of the Mississippi?

A small part of Illinois, consisting of Kaskaskia Township of Randolph County, lies west of the Mississippi River and adjoins Ste. Genevieve and Perry counties in Missouri. The state of Illinois originally lay entirely east of the Mississippi; but in April, 1881, that river, flooded as the result of heavy snows to the north, cut through a narrow strip of land into the Kaskaskia River and formed a new channel four miles east of its old course, thereby leaving about twenty-seven square miles of territory on the west side of the Mississippi. Much good farm land was destroyed and the site of historic Kaskaskia, captured by George Rogers Clark during the Revolution, was first

transferred from the left to the right bank of the Mississippi and then almost completely swept away. At first the old channel continued to carry a small stream, but that gradually disappeared and what was once the bed of the Mississippi at this point soon became a mere thread of sand covered with a growth of willows and cottonwoods. The inhabitants of Kaskaskia, whose homes were swept away, removed to New Kankaskia farther west or went elsewhere. Those who remained on the Illinois territory west of the river did not change their allegiance. When land is suddenly divided by the change in the course of a river the title to both parts remains in the original owner. The Mississippi also left several acres of Louisiana land on the east bank near Vicksburg, Mississippi, when it shifted its course in that region. But the Mississippi is not the only river that plays these pranks. Several hundred acres of Henderson County, Kentucky, near Evansville, Indiana, lie on the north side of the Ohio River. When the boundaries were fixed the southern Indiana line was placed at the north edge of the river as it then flowed, but later the river receded and left a plot of Kentucky land on the north side. Often motorists, approaching the river from the north near Evansville in Indiana, are surprised to see a sign, "Welcome to Kentucky."

What are the duties of the poet laureate of England?

The poet laureate of England, though technically an officer in the lord chamberlain's department of the royal household, has no prescribed duties. This honorary office developed from the minstrels and versifiers in the retinues of medieval kings. *Laureate* is from Latin *laurea*, "laurel tree," and refers to the ancient custom of crowning literary men, musicians and heroes with wreaths of laurel, the plant dedicated to Apollo, the god of poetry. This practice, though discontinued in the latter days of the Roman Empire, was revived in medieval Italy, and both Tasso and Petrarch were so honored. *Laureate* denotes one crowned with laurel and came to signify "eminence" from its long association with literary and military glory. Gulielmus Peregrinus acted as versifier in the train of Richard the Lionhearted, and in the time of Henry III (1207-1272) Martin Henry d'Avrincen was paid sixpence a day as "the king's versifier," being the earliest officially paid court poet of whom we have authentic record. Edward III patronized Geoffrey Chaucer by granting him a pension and an allotment of a daily pitcher of wine for life, and Richard II did something of the same sort for John Gower. Poet Laureate was once a regular degree in English universities, and in the preface to *The Boke of Eneydos*,

printed in 1490, William Caxton, the first English printer, referred to "Master John Skelton, lately created poet laureate in the unyversitie of Oxford." A "versifier" named John Kay described himself as the "humble poet laureate" of Edward IV. Queen Elizabeth favored Edmund Spenser with a pension, and in 1617 James I virtually recognized Ben Jonson as poet laureate, although the office was not created then and the poet was given no formal title. He was, however, granted a pension of 100 marks and an allotment of his favorite wine. In 1630 Charles II raised Jonson's yearly stipend to 100 pounds sterling and a "tierce (36 gallon) of Canary wine" from the royal cellar. It was presumed that a poet laureate could function better if well supplied with wine. Shakespeare, the greatest of all English poets, apparently was never considered for the post, but Sir William Davenant, regarded by some as Shakespeare's natural son, succeeded Jonson as virtual poet laureate. Of course, the poet laureateship was more or less suspended during the Puritan Commonwealth under Cromwell. John Milton, the greatest Puritan poet, was never poet laureate. The office became official in 1670, two years after Davenant's death, when Charles II conferred the title on John Dryden and granted him a pension of 300 pounds and a butt of Canary wine yearly. Dryden was deposed from the office by William and Mary in 1689 because he had become a Catholic and a partisan of James II. At that time the City of London also had a poet laureate. Elkanah Settle, personal and poetic enemy of Dryden, was appointed "city poet" by the lord mayor in 1691. Thomas Shadwell, who succeeded Dryden, originated annual birthday and New Year odes, and until the latter part of the reign of George III the poet laureate, in his capacity as court poet and official, was expected to produce formal and appropriate odes for the sovereign's birthday and on the occasion of a national victory. Since Shadwell, the poet laureates have been Nahum Tate, Nicholas Rowe, Laurence Eusden, Colley Cibber, William Whitehead, Thomas Warton, Henry James Pye, Robert Southey, William Wordsworth, Alfred Lord Tennyson, Alfred Austin, Robert Bridges and John Masefield. George V appointed Masefield poet laureate in 1930 upon the recommendation of the Labor ministry headed by Prime Minister J. Ramsay MacDonald. Theoretically the poet laureate is chosen by the sovereign; actually the selection is made by the ministry in power. Thus far no woman has been seriously considered for the honor. Sir Walter Scott turned down the job, and Wordsworth, before he would accept the office in 1843, stipulated that no formal or state productions would be required. In fact he was seventy-three years old when appointed and never wrote a

line of poetry during the seven years he was poet laureate. His successor, Tennyson, voluntarily produced numerous works in his capacity as court poet. Algernon Swinburne, one of England's greatest living poets after Tennyson's death, was passed over as poet laureate because of his "radical views." Rudyard Kipling was not appointed, according to a legend, because Queen Victoria was offended by his *The Widow of Windsor*, one of the *Barrack-Room Ballads* in which he described the widow of Windsor as sending English soldiers to "barbarious wars" and acquiring "'alf o' creation" with their blood. The "honorarium" of the poet laureate, now equivalent to about \$360 in gold, has varied considerably. Pye received the regular salary of 100 pounds plus 27 pounds in lieu of the traditional Canary wine. Wine ceased to be part of the poet laureate's salary when Tennyson was given 72 pounds a year plus 27 pounds in lieu of the Canary. In America some of the states—for instance, California, North Dakota, Texas, Georgia, West Virginia and South Carolina—have designated by executive or legislative action individuals as honorary state poet laureates without pay.

Why is a boat race called a regatta?

Regatta is a Venetian term defined by early Italian dictionaries as "strife," "contention," "contest" or "a struggling for mastery." It was the name given already in the later Middle Ages to annual boat races held on the Grand Canal in Venice between gondoliers. It has been suggested that *regatta* may have been originally the diminutive of Latin *regus*, "king," and that it at first referred to an entertainment given before the doge or "little king." A valuable prize was given to the captain of the winning gondola in the regatta, and as early as 1652 we find these regattas referred to as costly and ostentatious exhibitions of rowing skill. The first English regatta was held on the Thames in 1774. In time the name came to be applied to any elaborate boat race, or organized series of such races, regardless of the method of propulsion, particularly an exhibition of the kind that forms a prominent social or sporting event. By an edict issued in 1562 by the Great Council of Venice all gondolas were required to be painted black. Regatta Day (September 21) is a legal holiday in Hawaii.

Which is correct, *Havana* or *Habana*?

The name of the capital of Cuba, the largest city in the West Indies, is correctly spelled either *Havana* or *Habana*. *Havana* is the preferred spelling in English, and *Habana* in Spanish, but both spellings occur frequently in both languages. *La Habana* is the official Cuban spelling.

This variation arises from the fact that in Spanish *b* and *v* are pronounced almost alike, being uttered with the lips close together but not completely touching each other. "Oddly enough," says I. A. Wright in *Cuba*, "the spelling (with *v*) which is usual in English seems to have been the original, the present Spanish version (with *b*) being, I judge, a corruption occasioned by local mispronunciation of *v* and its consequent confusion with *b*." On July 25, 1514, a group of Spaniards settled on the site of the present port of Batabanó on the south shore of Cuba, almost directly across the island from the present site of Havana. This settlement was named *San Cristobal de la Havana*, because the date was the feast day of St. Christopher and *Havana* or *Avana* was the Indian name for that part of the island now comprising the province of Havana. Thus it will be seen that Havana was not so named because the name literally means *haven*, as often erroneously stated. In 1519 Diego Velazquez, conqueror and first Spanish governor of Cuba, repaired his ships in the present Havana harbor. He found the place especially desirable as a haven and therefore caused the San Cristobal de la Havana settlement to be removed across the island, first to what is now La Chorrera, and finally to its present site.

What is a honey guide?

The honey guide is a small bird native to parts of Africa and Asia and so named from its remarkable habit of leading men and animals to the nests of bees with a view to sharing in the spoils. This bird, which is plain in plumage, has a bill somewhat like that of a sparrow and toes like those of a woodpecker. Many travelers and naturalists report that the honey guide flits to and fro in the vicinity of human beings or animals and utters a harsh chatter to attract attention. When followed the bird flies from tree to tree until it leads to a nest of bees, whereupon it sits quietly in a near-by tree until the bees' nest has been opened and the robber has withdrawn. Then the bird descends and feeds upon the honey and the grubs in the combs. The honey guide has discovered that the ratel or honey badger is particularly fond of honey, and a strange partnership in crime is the result. Upon sighting a ratel the honey guide never ceases its harsh chatter until it induces the animal to follow it to a bees' nest, which the bird itself cannot open and which the ratel would have difficulty in locating. This extraordinary habit of the honey guide is known to many of the natives of Africa and they believe that misfortune and bad luck will befall anybody who does not leave a just share of the booty for the bird. One should be on his guard against ascribing too

much shrewdness and intelligence to the honey guide. The subject requires further observation and study. Nevertheless there is ample evidence to show that the antics and calls of the honey guide have the effect described. That the bird is not a trustworthy guide to honey in all cases has been demonstrated. Not infrequently it mistakes a dog or other animal for the ratel, and it has been known to lead human beings to a snake or wild beast instead of a bee tree. Because of this peculiar habit the genus to which this and related species belong has been named *Indicator*.

How did *mad as a March hare* originate?

Most lexicographers are of the opinion that *mad as a March hare* alludes to the antics of hares during the month of March, which is their breeding season. Madness and hares were associated in English phrases as early as the fourteenth century. "Mad were as an hare" occurs in Chaucer's *The Freres Tale*, written about 1386, and "as brainless as a March hare" dates back to at least 1500, according to William Hazlitt. John Skelton (c. 1460-1529) wrote: "I saye, thou madde March hare." "As mad as a March hare" is recorded in John Heywood's *Proverbs* (1546). Erasmus in 1542 used the form as "mad as a *marsh* hare." He explained: "Hares are wilder in *marshes* from the absence of hedges and cover." It is not difficult to see that *marsh* may have been corrupted into *March* after the original meaning was lost sight of. Shakespeare associated madness with hares. In *The Merchant of Venice*, Portia says: "The brain may devise laws for the blood, but a hot temper leaps o'er a cold decree; such a hare is madness the youth, to skip o'er the meshes of good counsel the cripple."

Who said he could move the earth if he had a place to stand?

Tradition attributes this saying to Archimedes (287-212 B.C.), Greek mathematician and inventor, who was the Benjamin Franklin of the ancient world and the subject of many legends. According to one legend, Archimedes once said to Hiero II, his kinsman and the tyrant of Syracuse: "Give me a place to stand [*pou sto*] and I will move the whole world with my steelyards." Another version of the saying is: "Give me a lever long enough and a prop strong enough and I can single-handed move the earth." No historical evidence that Archimedes actually made the statement has been discovered and many authorities regard it as an invention of later days. Another story is that Hiero asked Archimedes to test a gold crown to determine whether the smith who made it had alloyed the precious with base metal.

The philosopher didn't know how to do it, and so he went to his bathtub to think over the problem. As he lay in the tub he observed that some of the water ran over the edges, and the idea struck him that a solid body immersed in water must displace its own bulk of the liquid. Since silver is lighter than gold, he reasoned, a pound of silver would displace more water than a pound of gold and therefore would give him a method of measuring the quantity of each metal in Hiero's crown. Archimedes was so excited about the discovery that he jumped out of the tub and, without putting his clothes on, ran through the streets of Syracuse shouting, "*Eureka!*" which means "I have found it." In 214 B.C. the Romans under Claudius Marcellus invested Syracuse by land and sea. Archimedes is supposed to have invented and constructed all sorts of ingenious engines of war that played an important part in the defense of the city during the two-year siege. Some of his engines catapulted stones weighing 1,800 pounds for a distance of 600 feet. He is also supposed to have set Roman ships on fire by means of mirrors that reflected the rays of the sun. When Syracuse was finally taken Archimedes was killed despite orders issued by Marcellus to spare his life. Legend says the scientist was engaged in contemplation when a squad of soldiers burst into his room. To the soldier who was about to kill him he calmly said: "Don't disturb my circles."

Where is the heart located?

A person who is kindly, sympathetic and well-meaning, but who has appearances against him, is proverbially said to have his heart in the right place. In Ecclesiastes 10:2 the Preacher says that "a wise man's heart is at his right hand; but a fool's heart at his left." Many people have an incorrect notion as to the location of the heart. It is commonly said that the heart is located in the left side. That is not strictly true and is somewhat misleading. The heart of the adult is a four-chambered, conical, flattened, muscular bag in the cavity of the thorax between the lungs. It lies obliquely behind the lower two-thirds of the breastbone, with the base pointing upward, backward and toward the right with the apex pointing downward and toward the left. Actually the heart is about as near the center of the body in respect to right and left as its shape will permit. In adults the heart has an average length of about five inches and an average breadth of about three and a half, and weighs about ten ounces. It is roughly the size of one of the individual's closed fists, being somewhat smaller proportionately in women than in men. The heart contracts and expands and is some-

what larger when a person is active than when he is quiet. Although about twice as much of the heart projects to the left of the breastbone as projects to the right of it, the base and center of the organ are near the center of the chest, and if a vertical plane were run through the center of the breastbone half if not more of the heart would fall on the right side. The popular notion that the heart is on the left side of the body arose from the fact that the point of the conical organ inclines outward and downward in that region and the heartbeats are more sensible there. Some persons have what is known as dextrocardia; that is, the entire heart is mislocated and lies much farther to the right than in normal persons. Apparently such malposition of this vital organ has no ill effects on the health of the individual. Children born with the heart outside the chest have been known to live several days. Cases of adults with two well-developed hearts have been reported. Medical authorities admit that children may be born with two hearts but doubt that any such individuals survive. The common notion that the heart is the seat of the emotions and affections is not supported by scientific evidence. "I love you with all my heart" and similar expressions date back to a time when it was believed that people actually loved with their hearts. In ancient times it was believed that the bowels rather than the heart were the seat of the emotions and affections.

Who first ate tomatoes?

The tomato is a native of Latin America and was cultivated for food by the aborigines from Mexico to Peru. *Tomato* is derived through Spanish *tomate* from an Aztec (Nahuatl) word generally rendered *tomatl*. The Aztecs grew tomatoes in their patches of Indian corn and used them for food. The early conquistadors probably introduced tomatoes into Spain, whence the plant spread to all Europe. In Italy the people were eating yellow tomatoes as early as 1554 under the name "gold apples." The French called the tomato *pomme d'amour*, "love apple," probably on the assumption that the fruit was an aphrodisiac, and dashing young blades presented their ladies with these symbols of love. But people in northern Europe were slow to accept the tomato as good food. There was a widespread notion that the tomato was poisonous because it is a member of the nightshade family, although this family includes such nonpoisonous members as white potatoes, peppers and eggplant. The fact is that tomatoes, like many other edible plants, contain small quantities of oxalic acid, which, if taken in large concentrated doses, would be poisonous. In the sixteenth century the tomato was also called the "wolf peach" under the im-

pression that it would poison wolves. Eating tomatoes, it was believed, would cause stomach ulcers and even cancer. Consequently for 200 years the "love apple" was cultivated in England only for ornamental purposes and as a novelty. John Parkinson, writing in 1656, said tomatoes were cultivated at that time in England for ornament and curiosity only. Nearly a century later Philip Miller, in his gardener's dictionary (1747) wrote: "The Italians and Spaniards eat those apples, as we do cucumbers with pepper, oil and salt; and some eat them stewed in sauces, etc., but considering their great moisture and coldness, the nourishment they afford must be bad." But in a revised version of his book (1752) Miller wrote: "In soups they [tomatoes] are now much used in England . . . though there are persons who think them not wholesome." In his *Notes on Virginia* (1784) Thomas Jefferson said tomatoes were cultivated in gardens in Virginia for food purposes. Tomatoes were sold in the food markets of New Orleans as early as 1812. But in the northern states the English superstition that tomatoes were unwholesome, if not positively poisonous, persisted for many years. Michele Felic Corne, an Italian marine painter who came to America in 1799, raised tomatoes in his garden at Salem, Massachusetts, as early as 1802, but he was unable to induce his Yankee neighbors even to taste the suspicious vegetables. About the same time a girl in New Jersey who ate "love apples" was rushed to a doctor by her parents. Corne, who died in Newport, Rhode Island, in 1845 at the age of eighty-eight, is regarded by some as the man who introduced the tomato to New England as a food. Robert Gibbons Johnson is credited with considerable courage because in 1820 he stood in front of the courthouse in Salem, New Jersey, in the presence of a crowd and ate a tomato. The early tomatoes were small, rough-skinned and unattractive. In time plant breeders developed tomatoes without wrinkles and the prejudice against them was gradually broken down. By 1840 they were quite generally eaten in the North as well as the South. But as late as 1856 Ralph Waldo Emerson regarded the taste for tomatoes, like that for olives, an acquired one. Now tomatoes rank second only to potatoes among American vegetable crops.

What was Greek fire?

Few elements of ancient warfare have given rise to more fruitless speculation than a highly inflammable substance used during the Middle Ages by the Greeks of the Byzantine Empire. The Byzantines themselves called it liquid fire and it was first called Greek fire by the

Crusaders. Its chemical composition is variously supposed to have been a mixture of naphtha, resin, bitumen, petroleum, asphalt, sulphur, saltpeter, niter and quicklime. The United States War Department says there appears to be no doubt that naphtha was the chief ingredient and that it may also have contained sulphur and pitch. According to tradition, the peculiar liquid known as Greek fire was invented late in the seventh century by a Greek architect named Callinicus and was first used on a large scale to repel a Saracen attack upon Cyzicus in Asia Minor. The city was invested by a powerful force of Saracens, from whom it was delivered by the destruction of their fleet and 30,000 men by means of liquid fire. For centuries thereafter the secret of this deadly combustible was jealously guarded at Constantinople, but during the Crusades the secret leaked out and became common knowledge. The early accounts of the use and effect of Greek fire are so mingled with obvious fable that it is impossible to determine its real power as an agency of destruction. Greek fire is supposed to have been thrown over walls with ladles, projected with tow tied on arrows and javelins, and discharged from metal tubes resembling cannon. It has been stated that ignition may have been accomplished by mixing the liquid with quicklime, it being supposed that the slaking of the quicklime by sea water raised the temperature to the ignition point of sulphur; but attempts to ignite sulphur and naphtha in this manner have not been successful. The War Department thinks it more probable that the naphtha was simply dispersed from a squirt or fire engine and that it was ignited by means of a flame in front of the orifice. If that be so, Greek fire did not differ materially from the modern flame thrower, which originated in the United States Army during the First World War and was first used by the Germans during the last year of that conflict. In fact, incendiary bombs are merely the modern version of the ancient burning arrows, torches and firebrands tossed into fortresses and onto ships by assailants. As early as 425 B.C. the Spartans, while besieging Athens, burned sulphur to drive the defenders from the walls of the city. The army of Alexander the Great also used something of the sort at the siege of Tyre in 332 B.C. After Alexander's death scientists at Alexandria in Egypt experimented with "sea fire," which was produced by some combination of bitumen, pitch, sulphur and possibly petroleum and which would burn on water. Of the sea battle of Actium in 31 A.D. Plutarch says that "there were always three or four vessels of Caesar's about one of Antony's, pressing them with spears, javelins, poles, and several inventions of fire, which they flung among them." Some authorities suppose that flame

projectors may have been developed in the Orient independently of the West. Early in the thirteenth century the Mongols under Genghis Khan employed Chinese artillerists who appear to have devised flame projectors of various kinds. Tamerlane, who conquered a large part of Asia late in the fourteenth century, made considerable use of "fire pots," vessels of flaming liquid catapulted at the enemy by means of machines similar to those then used in casting stones. Greek fire, according to some accounts, was practically inextinguishable, even under water. Its chief purpose, it seems, was not so much the actual destruction that it produced but rather the terror and consternation into which it threw troops against whom it was used. Horses were frightened and driven from the field by its use, and wooden ships were destroyed with little difficulty. Liquid fire in one form or other continued to be an important element in warfare until it was supplanted by gunpowder.

Why is a lighthouse called a pharos?

A lighthouse for guiding seamen is called a pharos from the ancient light tower that stood on the island of Pharos in the harbor of Alexandria, Egypt. The Pharos tower was begun by Ptolemy I, who had been a general under Alexander the Great, and was completed during the reign of his son and successor, Ptolemy Philadelphus. Sostratus, a native of Cnidus in Asia Minor, was the architect and builder. The white marble structure was 100 feet square at the base, rose to a height of 490 feet (400 ells), and was rated as one of "the seven wonders of the ancient world." At the summit was a beacon fire that was kept burning from dark to dawn and that, according to the historian Josephus, could be seen over the water for a distance of about 34 miles (300 stadia). What was once Pharos island is now part of the mainland, the water that separated the two having silted up during the centuries. Part of the light tower was blown down during a storm in 703 A.D., and the ruin was completed by earthquakes in 1303 and 1346.

What is a sepoy?

Sepoy (pronounced *SEE-poy*) is the anglicized form of the name given to a Hindu or Indian soldier disciplined in the European manner and especially one actually in the service of a European power. The sepoys or native soldiers in the British service in India were for the most part Brahmans and Mohammedans. One of the causes of the Indian Mutiny of 1857 was that the sepoys had to use cartridges

supposed to be greased with tallow and lard and had to bite these cartridges with their teeth in the operation of loading their Enfield rifles. The Brahman considers the cow—the source of tallow—sacred, while the religion of the Moslem forbids the eating of the meat of the hog—the source of lard. Widespread discontent was fanned into a flame May 10, 1857, when some sepoy at Meerut mutinied and forcefully liberated a number of their fellows who had been imprisoned for refusing to touch the cartridges greased with tallow and lard. In *With Lawrence in Arabia* (1924) Lowell Thomas wrote: "Like the Sepoys of India in the days of Clive, the Bedouins refused to clean their rifles with grease made from pork, simply because the Mohammedan religion teaches them that pork is unclean." *Sepoy* is derived from Persian and Hindu *sipah*, "army," or *sipahi*, "soldier." In *The Lion of Yanina*, Stoyan Christowe says that during the war between the Suliotes and Ali Pasha in the Balkans the Christian Suliotes threw quartered pigs into the wells and cisterns to make the water unfit for the Moslem soldiers of the Lion of Yanina.

How did *to go west* originate?

During the First World War *to go west* became a popular euphemism among the British soldiers for *to die*. The phrase was common in South Africa at the beginning of the present century and it was probably taken to England by soldiers returning from the Boer War. Philologists are still at a loss to account for the origin of the phrase. It is improbable, as some suppose, that the phrase refers to the American pioneers and prospectors who "went west" in the early days of the United States. Writers in the sixteenth century said that condemned criminals taken from trial in London to be hanged at Tyburn "goe westward." A fourteenth-century poem contains the following refrain:

Women and mony wilsom wy
As wynd and watter ar gane west.

Thousands of years ago the Egyptians spoke of their dead as those who had "gone west." They believed that the abode of the dead was in the west, the land of the setting sun. More than 400 years B.C. the Greek tragic poet Sophocles wrote in *Oedipus Tyrannus*: "Life on life downstricken goes, swifter than the wild bird's flight, to the land of the western god." Similar beliefs were held by other peoples, including some American Indian tribes, who believed that the "happy hunting ground" was in the west and who therefore often put their dead on scaffolds facing that direction. But the Sioux thought of the

south rather than the west as the land of the dead, and when a member of the tribe died they said he had "gone south." The Norsemen had similar beliefs. When a Viking chieftain died he was placed in a boat with the sails set to bear him toward the setting sun.

What is meant by jugging bumblebees?

Boys in the country sometimes amuse themselves by what is known as "jugging bumblebees." An ordinary jug, preferably light in color, is partly filled with water and placed uncorked near a bumblebees' nest. The boys then excite the bees by poking the nest and running from the scene of danger. For some unexplained reason the open jug seems to have a strange fascination for the angered insects. With an angry "zipping" or buzzing noise the bumblebees shoot into the vessel and are drowned. It is said that the scheme is most effective when the jug used is white and is placed on a dark-colored canvas to make it conspicuous. The prime purpose of jugging bumblebees, of course, is to get them out of the way so their delicious honey can be enjoyed without molestation by the true owners.

Is whisky an antidote for snake bite?

Notwithstanding an almost world-wide belief to the contrary, whisky is not an antidote for poisonous snake bite. Experiments tend to show not only that whisky increases the ill effects of snake poisoning but also that alcoholic stimulants of any kind when taken in quantities are positively injurious to anybody who has been bitten by a venomous snake. Rats and guinea pigs subjected to venomous snake bite die more quickly when given whisky or alcohol in some other form than when the alleged antidote is not administered. Snake venom injected into the human blood stream weakens the heart and lowers the blood pressure. Alcohol or any other similar stimulant at first quickens the heart action and pumps the poison through the veins more rapidly and later, instead of acting as an antidote, reduces the blood pressure and the general vitality. It is not safe to administer a stimulant of any kind until after the poison has been extracted. If whisky has benefited persons bitten by poisonous snakes it was probably owing to a cause different from that popularly supposed. A person suddenly and unexpectedly bitten by a serpent usually becomes panicky. The excitement and agitation resulting from such fear naturally speeds up the circulation of the blood and hastens the distribution of the venom through the body. Excitement may also cause the person bitten to overlook important points of treatment. Whisky or

some other stimulant might tend to allay fear and prevent excitement. In fact the administration of any medicine in which the one bitten has faith, whether a stimulant or not, might have the same desirable effect. Raymond L. Ditmars, an authority on snakes, recommended a "small dose of brandy for giddiness" in case of venomous snake bite but asserted that whisky is useless as a cure. The belief that whisky cures snake bite is encouraged by the fact that many people take whisky after being bitten by snakes that are supposed to be poisonous but are not.

What is the Nordic theory?

Nordic is derived from Scandinavian *nord*, "north," and was applied by Joseph Deniker (1852-1918), French anthropologist and ethnographer, to a race of tall, blond, blue-eyed people who once inhabited northwestern Europe. The ancient Goths, for instance, were Nordics. Some authorities believe that traces of the original Nordic language survive in such words as English *wife* and *house*, which are not found in Indo-European languages outside the Teutonic group. Popularly *Nordic* has been extended to embrace all the Germanic or Teutonic peoples. The Nordic theory is that people of Nordic descent are the most highly developed branch of the white race and are superior biologically, intellectually and morally to all other races. This notion was foreshadowed in *The Goths in New England* (1843) by George Perkins Marsh, congressman, diplomat and scholar, who attributed the intellectual and moral virtues of the Anglo-Saxons to the Gothic strain in their blood. Later writers expanded this concept and developed the idea of "the great Nordic race." It is closely related to Aryanism. A legend, based on a liberal interpretation of certain Biblical passages, says that three grand divisions of the Caucasian or white race were founded by Noah's three sons. Shem was the father of the Semites—Hebrews, Arabs, Phoenicians and Carthaginians. Ham was the father of the Hamites—the dark-skinned, wavy-haired and oval-faced Caucasian race to which the ancient Egyptians belonged and traces of which are supposed to be found in the fellahs of the Nile Valley, the Nubians, the Ethiopians, the Berbers of the Atlas Mountains and a few roving Sahara tribes. Japheth was the father of the Japhethites, who are also called *Aryans* and *Indo-Europeans*, terms more properly used to denote a cultural and linguistic rather than a racial classification. The original Aryans are supposed to have been a Sanskrit-speaking people who lived on the Iranian plateau in Persia about 6,000 years ago. One branch of these

original Aryans migrated into India and another branch into Europe. Hence the linguistic term, *Indo-European*. Nobody knows for certain how *Aryan* originated. The ancient Persians called themselves *Ariya*, and *Arya* was a national name for the Sanskrit-speaking worshipers of the Brahman gods in India. At an early date the equivalent of *Aryan* came to denote "noble" or "honorable." Some authorities trace it to the Sanskrit root *ar*, "to plow," which occurs in Greek as *era*, "earth." One theory is that the original Aryans in Persia considered themselves of a noble and superior caste because they lived by tilling the soil instead of by grazing and hunting like the neighboring nomads. At any rate, the Aryans of India became a race of "bluebloods" in their own estimation. The *Code of Manu*, dating back at least 2,000 years, says: "A man who is not an Aryan is betrayed by behavior unworthy of an Aryan; harshness, cruelty, and neglect of duty." George Abraham Grierson, the philologist who directed the Linguistic Survey of India, wrote: "Indians and Iranians who are descended from an Indo-European stock have a perfect right to call themselves Aryans, but we English have not." Linguistically, the Hindus, Persians, Armenians, Slavs, Greeks, Latins, Celts and Teutons are all Aryans or Indo-Europeans. If there ever was a distinctive race of Aryans, their descendants are now hopelessly intermingled with other races. Friedrich Max Müller (1823-1900), German-born English philologist and Orientalist, wrote: "To me an ethnologist who speaks of Aryan race, Aryan blood, Aryan eyes and hair, is as great a sinner as a linguist who speaks of a dolichocephalic dictionary or a brachycephalic grammar."

How did the custom of christening ships originate?

Christening a new ship by breaking a bottle of wine over its prow is believed to be a survival of the ancient custom of dedicating each vessel to the protection of a god. Ancient ships often bore the images of the deities to which they were consecrated. The wine probably represents the libation poured out in connection with sacrifices. This libation in turn symbolized the blood of a human or animal offering. A connection between offering sacrifices and setting out to sea may be hinted at in Psalm 107:22-30, which reads: "And let them sacrifice the sacrifices of thanksgiving, and declare his works with rejoicing. They that go down to the sea in ships, that do business in great waters; these see the works of the Lord, and his wonders in the deep. For he commandeth, and raiseth the stormy wind, which lifteth up the waves thereof. They mount up to the heaven, they go down again

to the depths: their soul is melted because of trouble. They reel to and fro, and stagger like a drunken man, and are at their wits' end. Then they cry unto the Lord in their trouble, and he bringeth them out of their distresses. He maketh the storm a calm, so that the waves thereof are still. Then are they glad because they be quiet; so he bringeth them unto their desired haven." Greek and Roman priests propitiated the gods by sacrificing animals and by performing incantations when a ship was launched or was about to set out on a long voyage. During the Middle Ages this pagan ritual was absorbed by Christianity and became comparable to a baptism and formal blessing. In some parts of the world it is still customary for a clergyman to bless a fishing fleet when it sets out on its annual cruise. The chronicles of the monks of St. Denys refer to a trip that the Bishop of Bangor made to Southampton in 1418 to bless one of the king's ships that was about to be launched. In time the christening ceremony lost its religious significance and became merely a seamen's custom. Washington Irving, in *Astoria*, refers to a similar practice in connection with taking possession of forts and territory. "On the 12th of December (1813)," wrote the father of American letters, "the fate of Astoria was consummated by a regular ceremonial. Captain Black, attended by his officers, entered the fort, caused the British standard to be erected, broke a bottle of wine, and declared in a loud voice, that he took possession of the establishment and of the country, in the name of his Britannic Majesty, changing the name of Astoria to Fort George." Originally red wine was generally used in ship-launching ceremonies, but later the sparkling and effervescent white wine known as champagne was substituted, probably because it was rarer, more costly, held in higher esteem and therefore deemed more worthy for such a purpose. During prohibition in the United States water or some other liquid was sometimes used, but conservative seamen opposed the substitution on the ground it would bring bad luck. "Sponsoring ships" was a man's function until the nineteenth century when the British Admiralty conceived the idea of having ladies of the court act as sponsors. The first woman to sponsor a ship launching in the United States was a Miss Watson, of Philadelphia, who broke a bottle of wine and water on the prow of the battleship *Germantown* in 1846. Now the sponsoring of ships is exclusively a woman's function and this service is performed by queens, wives and daughters of presidents and cabinet officers, female relatives of persons after whom the ship is named or other women designated by the shipbuilders. At the launching ceremony the sponsor, as she

breaks the bottle of champagne, says, "I christen thee" or "I sponsor thee." It is customary for the sponsor to receive a gift for her services. In 1905 the women who had broken bottles over the prows of United States Navy vessels formed a philanthropic organization known as the Society of Navy Sponsors, which still holds an annual patriotic service in a Washington church. Airships are christened by breaking the traditional bottle of champagne on a propeller. As a rule a ship is between 60 and 70 percent completed when launched. The services of about 100 men are required to launch a ship with formal ceremonies. So many ships were launched during the Second World War that decorating champagne bottles for christenings became a full-time job for one woman in some shipbuilding yards. Efforts of government agencies and shipbuilding companies to abandon expensive and elaborate launching ceremonies were opposed by many shipyard workers and seamen on the ground that every ship is entitled to such a ceremony before it goes to sea. It is said that the Japanese started the practice of releasing doves in connection with ship-launching ceremonies. Three pigeons were released when the *Chicago* was launched in the United States in 1885.

What percentage of North American rivers flow south?

About 95 percent of all rivers in North America flow south, in a southerly direction or into streams that flow southward. The St. Johns River in Florida is the only important river wholly within the United States whose course is in a northerly direction. The Red River of the North rises in Lake Traverse on the Minnesota-South Dakota border and flows into Lake Winnipeg in Canada. A number of rivers, such as the Monongahela, the Tennessee, the Big Horn, the Montana and the Powder rivers, flow northward for part of their course.

How was quinine discovered?

Quinine, one of the most important drugs known to man because it is a specific cure and preventive for several types of malaria, is obtained from the dried bark of an evergreen tree native to South America. Before the arrival of the Spanish conquerors the natives in the Andes knew that drinking a brew made of the bark of this tree warded off chills and fevers. The Incas called it *quina-quina*, "bark-bark," because in the Quechua language, as in many others, repetition of a noun indicated that the object described possessed peculiar virtues. According to Indian legend, the curative qualities of quina-quina were discovered accidentally by an Indian overcome

by fever in the jungle. He dragged himself to a stagnant pool to quench his burning thirst only to find that a quina-quina tree had fallen into the water. His people had always believed that the bitter bark of this tree was poisonous, but, preferring a quick death by poison to a lingering one by fever, he drank some of the water anyhow—and was cured. About 1620 the secret of quinine (the name is merely a corruption of *quina-quina*) was learned by Jesuits in Ecuador. From a Peruvian monastery Padre Calancha wrote in 1633: "In the country of Loja, there is a tree which they call the fever tree, the bark of which, ground to powder and administered in the form of a potion, cures fevers and tertianas; there have been marvelous examples of this in Lima." A few years later quinine became associated with the name *Chinchón*. The usual version of the story is that in 1639 the Countess of Chinchón, wife of the Spanish viceroy of Peru, was stricken with malaria and applied for relief to the viceregal physician, Dr. Juan de Vega. Don Juan Lopez, corregidor of Loja in Ecuador, obtained from a Jesuit some of the powdered bark known to the Indians as quina-quina and Dr. de Vega administered it to the countess with speedy and complete success. Another version is that it was the count himself who had malaria and that the countess administered the Indian remedy to her husband after their physician refused to do so. At any rate, the next year the countess returned to Spain with her husband and took some quinine with her, with the result that the fame of "countess bark" spread far and wide. Meanwhile a Jesuit priest named Acuña accompanied an exploring party to the mouth of the Amazon and lauded the merits of "Peruvian bark," in his reports. The fact that Louis XIV of France was cured of malaria by the use of Jesuit's bark further popularized the drug. About 1650 Cardinal John de Lago, a Jesuit at Rome, began to have parcels of the powdered bark distributed to Jesuits in different parts of the world, in consequence of which it became widely known as "cardinal's bark," "Jesuits' bark" and "Jesuits' powder," names that caused the drug to be opposed for a time by Protestants and favored by Catholics. In their diaries William Byrd of Westover and George Washington refer to quinine as "Jesuits' bark" or simply "the bark." The Swedish botanist Linnaeus called the genus of the quinine-yielding tree *chinchona* to commemorate the name of Countess Chinchón, but his purpose has been partly defeated by the fact that the spelling has been altered from *chinchona* to *cinchona*. At first "fever bark" was used in a crude powdered form. In time it was learned that the curative principle lies in a bitter, white, colorless, fusible and crystallized

substance and that the bisulphate or any one of several other salts of the alkaloid is sufficient for medical purposes. South America was almost denuded of its wild cinchona trees because they were destroyed to obtain the bark. During the nineteenth century the British and Dutch transplanted cinchona trees in the East Indies, and even South America, the native home of cinchona trees, had to import most of its quinine from India and Java. Sir Clements Robert Markham (1830-1916), English traveler and geographer who had lived in both Peru and India, is credited with having introduced cinchona cultivation from South America into the East Indies. Many unsuccessful attempts were made to produce quinine from cultivated trees in the New World. In recent time cinchona plantations have been established in South America, Central America and the West Indies with seeds or plants from the East Indies, where particularly good varieties have been developed. As early as the time of the Crimean War, when the demand for quinine was acute, an English chemist named Sir William Henry Perkins undertook to develop a substitute for quinine, but no synthetic drug equivalent to quinine in effectiveness was produced until the Second World War. Quinine was materially responsible for making vast regions in the tropics inhabitable to the white race.

Do human beings inherit the fear of snakes?

All evidence points to the conclusion that human beings do not inherit the fear of snakes. This fear is generally acquired early in life through the example and direct teaching of older persons. As a rule children left to themselves in this regard are not more afraid of snakes than of other creatures. There is a common notion that apes and monkeys are born with an instinctive fear of serpents of all kinds. Experiments with monkeys bred in captivity indicate that this is not true.

When did the habit of chewing gum originate?

Many ancient peoples chewed various natural resins and gums. In *Precepts About Health* Plutarch (46-120 A.D.) wrote that "chewing of mallows is very wholesome." Resin exuded by spruce and other evergreen trees was chewed by some of the North American Indians. A Spanish monk with the conquerors of Mexico observed that the Aztec women had uniformly regular and beautiful teeth, a fact he attributed to their habit of chewing chicle, which is now the adhesive base and chief ingredient of chewing gum. *Chicle* (pronounced

CHEE-k'l) is from an Aztec word meaning simply "saliva" or "juice," but it has long been applied specifically to the milky sap of the sapota tree, a native evergreen of Central America and tropical South America. Americans, however, did not borrow the gum-chewing habit directly from the Mexicans. The first commercial gum used in the United States was the unprocessed resin exuded by spruce, cherry, tamarack and sweet gum trees. Later paraffin wax was mixed with natural gums and flavoring matter added. William F. Semple, of Mount Vernon, Ohio, obtained the first patent on chewing gum in 1869. Chicle, the solidified sap of the sapota tree, was first brought to the United States as a substitute for India rubber, which it resembles. In fact, chicle gum was at first called "rubber gum" to distinguish it from resin and wax gums. A legend says that Santa Anna, the Mexican dictator, accidentally introduced chicle into the United States. According to the story, he was fond of chewing "Aztec gum" and gave a small piece of chicle to James Adams, who was his secretary while in exile in New York. Adams showed the chicle to his father, Thomas Adams, who tried to vulcanize it in an attempt to find a better grade of rubber. From Mexico Santa Anna later sent Adams about twenty pounds of chicle to experiment with. About 1860 the elder Adams, aware that chicle was used as gum in Mexico, discovered that chicle flavored with licorice made a chewing gum superior to the spruce and cherry gums then on the market. The Adams family began to import chicle and went into the chewing gum business. In 1871 the Adams's obtained a patent on the first gum-making machine. Fifty years later millions of pounds of chicle were being imported every year and chicle gathering in the forests of Central America and gum manufacturing in the United States had become large industries. Most of the chicle is still obtained from wild trees, although some is produced on plantations. Gum chewing is regarded as a harmless habit that relaxes the nerves, aids digestion by increasing the flow of saliva and preserves the teeth.

Do toads live for years embedded in solid rock?

That toads often live in a dormant state for years embedded in rocks, masonry, concrete, baked mud and growing trees is one of the most firmly established of all popular beliefs. Alleged cases of toads that have lived in solid rock or masonry for many years are frequently reported. Unfortunately most of those who have witnessed such apparent occurrences have been too much engrossed in the toad itself and too ready to accept the usual explanation to examine the conditions.

Numerous experiments have been made to test this ancient and popular belief. As early as 1777 a Frenchman named Hérissant embedded three live toads in plaster and placed them in the archives of the French Academy of Sciences. At the end of eighteen months two of the toads were still alive. In 1817 a Dr. Edwards repeated the experiment, but submerged the plaster blocks in water, with the result that all the toads died in a short time. Francis T. Buckland, an English zoologist, to determine whether toads can live indefinitely without food, water or oxygen, in 1825 sealed twelve of these creatures in separate holes bored into a block of porous limestone. Twelve other toads were imprisoned in a similar manner in a block of dense sandstone. At the end of fifty-four weeks, when the cavities were first unsealed, the twelve toads in the sandstone were all dead, while the other twelve were alive and continued to live for many months longer, enough oxygen having penetrated the porous limestone to sustain life. Dr. Archie Kirkland, an American entomologist, investigated the subject for the United States Department of Agriculture and reported he did not find a single case where there was conclusive evidence of a toad remaining alive in a dormant condition in rocks, masonry or trees for a long period of years. In 1928 a sand-pit operator in Oklahoma found a small toad encased in a round mudball about the size of a cantaloupe. Since the same pit contained the bones of animals that had become extinct in prehistoric times, the finder thought the mudball with the toad inside might date from the same period and accordingly he sent it to the United States National Museum. Dr. Oliver P. Hay, a scientist associated with the museum, reported that the specimen in the mudball was a common western hoptoad not more than a year or two old. "No animal," Hay asserted, "could live several thousand years, or even several years, in a ball of clay." The toad, he said, evidently had dug itself into the earth and then rolled itself into the clayball, as many burrowing toads are known to do preparatory to hibernation. Toads are cold-blooded creatures, that is, the temperature of their body fluid varies with the temperature of their environment, and they pass long periods in a dormant state without food or water and with very little air. During the winter, when in a state of hibernation, the toad may live for days with virtually no air, but in the summer, when its system is active, it would soon die if deprived of air. "It is biologically impossible for a vertebrate animal to live without oxygen," declared Dr. G. Kingsley Noble, curator of reptiles and amphibians at the American Museum of Natural History in New York. "Some creatures, notably

the lower worms, generate oxygen in their own bodies, but this supply is not large enough to allow them to exist in the ground for long periods without access to air. When a toad is found alive in a rock pocket it is safe to assume that he has been getting air from a crevice." Toads, when the time for hibernation arrives, burrow into the ground or back into fissures in rocks. Then their breathing becomes greatly restricted and a very small quantity of air is sufficient to keep them alive. Frequently such specimens are discovered after blasting operations and untrained observers jump to the conclusion that they have been confined within the solid rock. What has been said about toads applies also to frogs. In the Southwest there is a popular belief that the horned toad will live a century without food, water or air. This is merely the old belief about the common toad transferred to the horned toad, which is not a true toad at all, but a variety of spiny lizard. Toads and lizards do not belong to the same class of animals, the former being amphibians and the latter reptiles. What was alleged to be partial confirmation of the popular belief was reported in 1928, when a horned toad that had been sealed in the cornerstone of the courthouse at Eastland, Texas, in 1897 by W. M. Wood was removed alive from the same stone by Wood in the presence of numerous witnesses. The toad was neither inserted nor removed in the presence of competent scientists and consequently the incident supplies no definite evidence of suspended animation that can be accepted by scientists. That the horned toad can live for years without air, food or water is "absolutely impossible," according to Dr. William M. Mann, director of the National Zoological Park at Washington. It is a surface lizard, he asserted, and "could live only a short time without air and food." "The horned toad is actually a lizard," said the late Raymond L. Ditmars, then curator of reptiles at the New York Zoological Park, "and I doubt very much that any specimen of the kind can remain alive for a period of years without air, food or water." Although the question has not been definitely settled, the majority of scientists believe that no toad, frog or lizard can live for years sealed in solid rock, masonry, concrete or a living tree. In 1928 a horned toad from Texas was placed in an airtight jar in the laboratory at Oglethorpe University at Atlanta, Georgia, but it survived less than five weeks. Professor F. G. Hall of the University of Wisconsin kept a horned toad alive in a perfectly dry atmosphere without water for 119 days. Certain lower creatures, such as centipedes, beetles and even snails, can be kept alive much longer than toads or lizards without air, food or water. Members of the lizard family in par-

ticular can subsist for considerable periods without any visible sustenance. Long abstinence is not followed in these creatures by the usual destructive exhaustion because of their sluggishness, paucity of blood and the small amount of heat compared with the great humidity in their bodies. Cold and phlegmatic bodies can subsist longer without nutrition than warm and active ones can, and it has been observed that aged people generally endure fasting better than younger ones. In ancient times it was believed that the chameleon, a kind of lizard, lived entirely on air and was sustained without any other aliment. Its manner of feeding had not then been ascertained. Although careful experiments have shown that the chameleon can live at least four months without eating, it regularly feeds on insects, which it catches with its long gluey tongue and crushes between its jaws.

When were table forks first used?

Table forks were unknown to the ancients. "Fingers were made before forks, and hands before knives," wrote Jonathan Swift in *Polite Conversation* (1738). Both knives and spoons, in one form or other, date from prehistoric times, but even they were little used as table utensils until the Middle Ages. The Greeks and Romans had their food cut into small pieces before it was served and ate it with their fingers. Sometime during the late Middle Ages the upper classes in Italy began to use forks for eating purposes. In the eleventh century a Venetian lady, wife of Doge Comenico Silivio and daughter of the Byzantine emperor Constantine Ducas, was described as "luxurious beyond belief" because she ate with a small gold fork. Before the seventeenth century dining forks were nowhere in general use outside Italy. These utensils are not mentioned by Shakespeare. Queen Elizabeth, like her predecessors, ate with her fingers and used neither knife nor fork, although knives and spoons for conveying food from the plate to the mouth were then coming into use. A satirical pamphlet of the time ridiculed certain courtiers of Henry III of France (1551-1589) for conveying bits of meat to their mouths on large pronged implements. James I was the first British sovereign to eat with a fork. This utensil is believed to have been introduced into England from Italy in 1608 by Thomas Coryate (1577?-1617), an eccentric English traveler and writer, who in 1608 began a prolonged walking tour on the continent. While in Italy he took a fancy to forks and undertook to introduce them among his countrymen. In *Coryate's Crudities hastily gobbled up in Five Months' Travels in France, Italy, etc.*, an account

of his experiences, he wrote: "The Italians and also most strangers that are commorant in Italie doe alwaies at the meales use a little forke when they cut their meate. For while with their knife which they hold in one hand, they cut the meate out of the dishe, they fasten their forke which they holde in their other hande, upon the same dishe." "The Italians," he explained, "cannot by any means endure to have their flesh touched with fingers, seeing all men's fingers are not alike clean." Coryate tells us that he was called *furcifer* ("fork-bearer," from Latin *forcus*, "fork") by his acquaintances and otherwise ridiculed because he ate with those "Italian neatnesses called forks." The use of forks spread slowly among the English because it was regarded as effeminate. Even families who had forks used them only on special occasions. Forks are not mentioned among the utensils brought over by the first Virginia, New England and Maryland colonists. It is said that a fork brought to Boston by Governor John Winthrop in 1630 was kept in a case and exhibited like a piece of jewelry. Americans did not use table forks generally until the eighteenth century. Even the English novelist James Payn (1830-1898) could still write of "the culture of the silver-fork school without their affectation."

How did *Westward Ho* originate?

Ho is an old nautical term and is often used after the name of a thing or place to which attention is called. *Westward Ho* and *Eastward Ho* are used by seamen to direct attention to the place or direction for which they are starting. These terms became familiar to Londoners because of their frequent use by Thames boatmen. The following interesting passage occurs in George Peele's drama entitled *The Famous Chronicle of King Edward I, Surnamed Edward Longshanks*, first printed in 1593:

(A cry of Westward, Ho!)

QUEEN ELINOR: Woman, what noise is that I hear?

POTTER'S WIFE: It is the watermen that call for passengers to go westward now.

In Shakespeare's *Twelfth Night*, written about 1601, Olivia says, "There lies your way, due west," and Viola replies, "Then westward ho! Grace and good disposition attend your ladyship." Ben Jonson, in collaboration with Chapman and Marston, in 1605 produced a comedy entitled *Westward Hoe*, and in 1832 James K. Paulding published a novel with the same title. *Westward Ho! or the Voyages and Adventures of Sir Amyas Leigh in the Reign of Queen Elizabeth*

is the title of a book published by Charles Kingsley in 1855. This story of the sea gave its name to Westward Ho!, a seaside town in Devonshire, England. The Countess of Portsmouth, a great admirer of Kingsley's book, with its battlecry, "Westward Ho! with a rumble-low, and hurra for the Spanish Main, O!" presided when the cornerstone of a hotel was laid on the site in 1863 and she gave the place the name that has clung to it ever since. The inhabitants insist on the exclamation point and always write it *Westward Ho!*

What is the Loop in Chicago?

The Chicago River and its North and South branches divide Chicago into three sections known as the North, West and South sides. *The Loop* is the popular name for a district on the South Side encircled by a "loop" of the elevated railroad lines running into the city from the suburbs. It was formerly the chief business, financial, theatrical and hotel center of the city, and, although the business center and trade district has spread beyond these bounds, it is still the heart of the congested section. The actual "loop" made by the elevated railways is an elongated area bounded on the north by Lake Street, on the south by Van Buren Street, on the east by Wabash Avenue, and on the west by Fifth Avenue far over on the West Side. When an elevated railway was built north and south along Wells Street a district about one square mile in area on the South Side was completely surrounded by the elevated railways and the name *Loop* was at one time largely restricted to this district. But as the city grew there was a tendency to extend *Loop* to a larger section and not to restrict the term to the area actually enclosed by the loop of the elevated railways. At present the Loop generally means a district comprising an area of about one and a half square miles and lying between Lake Michigan on the east and the Chicago River and its South Branch on the north and west respectively, and extending south to Twelfth Street. This "forest of skyscrapers" is one of the busiest spots on earth.

What is the smallest hoofed animal?

The mouse deer or chevrotain (literally "little goat"), which is native to the East Indies and western Africa, is believed to be the smallest hoofed animal as well as the smallest ruminant in the world. Adults of *Tragulus kanchil* have bodies no larger than a jack rabbit, weigh only about five or six pounds, have legs scarcely larger than lead pencils and are only nine to twelve inches in height at the shoulders. These tiny animals, which represent a stage in evolution between

the swine and the true deer, are hornless and look more like hoofed rodents than ruminants. They walk on the tips of their toes and sleep with their eyes open. The chevrotain is rivaled in smallness of stature among hoofed animals by another ruminant, the dik-dik, or dig-dig, a tiny antelope native to Ethiopia, the Sudan and other parts of northeastern Africa. Scientifically it is known as *Madoqua rhynchotragus* and popularly it is sometimes called the royal antelope. Members of this and allied species of the genus *Madoqua* range from twelve to fifteen inches in height. They scarcely look like true antelopes because of their inflated proboscislike noses. There are several other species of very small African antelopes. *Oreotragus oreotragus*, found from Cape Colony to Somaliland, is called klipspringer (literally "cliff jumper" in Dutch) because it is somewhat like the chamois in habits and has such small feet that it can stand on a quarter. Another small African antelope, *Cephalophus*, is known as the duiker or duikerbok (literally "diver buck" in Dutch) from its habit of "diving" into the brush. It stands twelve to twenty-four inches high at the shoulders and can leap four or five feet when hard pressed. All these diminutive deer are noted for their fleetness and their craftiness in avoiding capture.

Why is hunger referred to as the wolf at the door?

The wolf has the reputation of being ravenous and voracious, and in England since Anglo-Saxon times danger, hunger, starvation and poverty have been known as the wolf at the door. Apparently the earliest form of the phrase was "keeping the wolf from the gate" and it gradually came to mean danger of any kind. By the seventeenth century "keeping the wolf from the door" was already a common expression and it had acquired the present specific meaning of keeping away hunger and want or warding off starvation. A species of large wolf was once common in the British Isles and in western Europe. It is believed to have become extinct in England and Wales in the sixteenth century, in Scotland in the seventeenth and in Ireland in the eighteenth. A voracious person is said to have a wolf in his stomach, and one who eats ravenously is accused of wolfing his food. In German *Wolfsmagen* signifies a sharp appetite, and in French *manger comme un loup*, "to eat like a wolf," means to devour food voraciously. The proverbial voracity of the wolf is frequently referred to in the King James Version of the Bible and in Shakespeare. Genesis 49:27 says, "Benjamin shall ravin as a wolf," and in Matthew 7:15 Jesus is quoted as saying, "Beware of false prophets, which come to

you in sheep's clothing, but inwardly they are ravening wolves." In *The Merchant of Venice* Gratiano tells Shylock that his desires "are wolfish, bloody, starv'd and ravenous"; in *Troilus and Cressida* Ulysses refers to appetite as a "universal wolf," and in *Timon of Athens* the embittered Athenian lord tells the churlish philosopher Apemantus that if he were a wolf his "greediness would afflict thee, and oft thou shouldst hazard thy life for thy dinner." Although the ferocity of the European wolf has been greatly exaggerated in folklore and literature this animal apparently did occasionally, when hungry, attack children and even adults. When wolves were numerous in Britain there was real danger from a hungry wolf hanging about a home in the hope of seizing a fowl, a domestic animal or even a child. As late as the 1500's John Skelton wrote in *Colyn Cloute* that "The wolf at the door is more than a figure of speech." January, the time when wolves were most likely to be hungry and therefore dangerous, was called *Wolfmonth* by the Anglo-Saxons. The reputation of the wolf was so bad that for thousands of years men were prejudiced against its descendant, the dog. With few exceptions, whenever the dog is mentioned in the Bible and in Shakespeare, it is referred to unfavorably.

Is a circle around the moon a sign of bad weather?

That a circle around the moon is a sign of bad weather is an old notion. Under date of January 26, 1760, George Washington noted in his diary: "A very remarkable circle round the Moon—another Indication of falling Weather." The apparent circles around the moon known as "lunar halos," meteorologists tell us, are just about as likely to precede good weather as bad, and they have little if any value as weather signs. True halos around the sun and moon are produced by the refraction of light rays passing through a high, thin cloud of ice crystals floating in the atmosphere or by the reflection of light rays from the surface of such crystals. Even in the warmest weather the temperature of the upper atmosphere is below freezing and halos may appear at all times of the year. Perhaps, since the type of clouds favorable for the production of halos often occurs on the forward side of a widespread cyclone, it would be more accurate to say that the chances are slightly in favor of precipitation following such circles within a day or two. As a general rule halos caused by refraction are tinted while those caused by reflection are white. Halos assume a great variety of sizes and forms, depending on the shape and position of the ice crystals, each one of which acts as a tiny prism.

Much smaller rings around the sun and moon are called coronas and are produced by light rays passing through minute drops of water in the atmosphere.

Is the tomato a fruit or a vegetable?

Botanists class the tomato technically as a berry, which, in a strictly scientific sense, is a simple fruit in which the entire pericarp or edible part except the outer skin is fleshy. According to this classification, tomatoes, grapes, currants and bananas are all berries and consequently part of the larger division of plants called fruits. On the other hand, the United States Department of Agriculture in its bulletins and reports classes the tomato as a vegetable. Horticulturists agree that the tomato is a vegetable and so classify the plant in horticultural works. Tariff, freight and other classifications also include the tomato among vegetables. There is small wonder that many people are confused as to whether the tomato should be called a vegetable or a fruit. Custom, rather than botanical distinction, is often adhered to in the popular and commercial classification of vegetables and fruits. Even the fruiting habit of a plant, whether the fruit is borne below the ground, on a trailing vine or on an erect stem, is not a deciding factor. In the popular sense of the terms there is no sharp distinction between fruits and vegetables. *Fruit* is derived through early French from Latin *fructus*, which is from a root meaning "to enjoy." Originally *fruit* signified vegetable products in general that are fit to be used as food by men and animals. In that sense the term is now used in the plural. *Fruit* is now defined as the edible product of a plant or tree, consisting of the seed and envelope, especially the latter when juicy and pulpy. In this sense apples, oranges, plums, pears and peaches are fruits. *Vegetable* is derived ultimately from Latin *vegetare*, "to animate," "to enliven" or "to grow." Originally *vegetable* signified a living organism belonging to the plant kingdom and devoid of animal life. Now the term generally means an edible herb or root cultivated for human food and commonly eaten, either cooked or raw, with meat or other articles of food. The United States Tariff Act of 1883 levied duties on imported vegetables but not on fruits. In 1887 a man named Nix brought action against the collector of the Port of New York to recover back-duties paid under protest on tomatoes imported from the West Indies. Nix contended that tomatoes are fruit, not vegetables, and therefore were duty free. The lower courts ruled that tomatoes are vegetables and that Nix would have to pay the duty. On May 10, 1893, in *Nix vs. Heddon*, the United States

Supreme Court sustained Heddon, the collector of customs. In the opinion of the court Associate Justice Horace Gray asserted:

The single question in this case is whether tomatoes, considered as provisions, are to be classed as *vegetables* or as *fruit*, within the meaning of the Tariff Act of 1883. . . . The passages cited from the dictionaries define the word *fruit* as the seed of plants, or that part of plants which contains the seed, and especially the juicy, pulpy products of certain plants, covering and containing the seed. These definitions have no tendency to show that tomatoes are *fruit*, as distinguished from *vegetables*, in common speech, or within the meaning of the Tariff Act. There being no evidence that the words *fruit* and *vegetables* have acquired any special meaning in trade or commerce, they must receive their ordinary meaning. Of that meaning the court is bound to take judicial notice, as it does in regard to all words in our own tongue; and upon such a question dictionaries are admitted, not as evidence, but only as aids to the memory and understanding of the court. . . . Botanically speaking, tomatoes are the fruit of a vine, just as are cucumbers, squashes, beans and peas. But in the common language of the people, whether sellers or consumers of provisions, all these are vegetables, which are grown in kitchen gardens, and which, whether eaten cooked or raw, are, like potatoes, carrots, parsnips, turnips, beets, cauliflower, cabbage, celery and lettuce, usually served at dinner in, with or after the soup, fish or meats which constitute the principal part of the repast, and not, like fruits generally, as dessert.

This definition of Justice Gray, although often ridiculed as pompous and pontifical, covers the case well enough for all practical purposes.

What are the clothing colors for baby boys and girls?

According to a traditional color scheme, which is of unknown origin, baby boys are properly dressed in pink clothing and baby girls in blue, although, oddly enough, in some parts of the United States, particularly in the South, this symbolical color arrangement is reversed and baby boys are dressed in blue and girls in pink. Blue has been associated with youth in art and literature since time immemorial. One writer suggests that blue may have been chosen as the proper color for the clothing of girls because that was the color associated in Christian art and literature with the Virgin Mary and the royal house of David to which she belonged. Whatever the reason, blue and pink have become associated with the clothing of babies, and this fact has considerable commercial effect upon the manufacture and distribution of children's wear. When friends are notified that the stork has paid a visit to a home the announcement cards are often decorated with blue ribbons if the baby is a girl, and with pink

ones if it is a boy. Apparently, however, this traditional color arrangement based on the sex of the child is giving way to more practical considerations and is not observed to the extent that it once was. Persons in the clothing business say there is now a tendency to use pink and blue interchangeably for baby boys and girls.

Was Guillotin a victim of his own invention?

That the French physician Dr. Joseph Ignace Guillotin invented the instrument of execution bearing his name and was a victim of that mode of decapitation is a persistent fable. Dr. Guillotin did not invent the guillotine and he was not put to death by it. Machines for decapitation resembling the guillotine were in use in Italy, Germany, England, Scotland and even parts of France long before the French Revolution. When the French Revolution broke out people resented the fact that under the existing penal code only nobles had the privilege of being decapitated. Before that, ordinary condemned persons were hanged, broken on the wheel, tortured on the rack, burned at the stake or executed by other plebeian methods. In 1784 Dr. Guillotin, a member of the Academy of Surgeons, served with Benjamin Franklin on a committee appointed by the king to investigate and report on Dr. Franz Anton Mesmer and his mesmerism. On December 1, 1789, Dr. Guillotin proposed in the Constituent Assembly that "in all cases of capital punishment it shall be of the same kind—that is, decapitation—and that it shall be executed by means of a machine." He was a humanitarian as well as an ardent revolutionist and sought merely a swift, painless, uniform and democratic method of execution that all condemned citizens might enjoy regardless of social status. The sponsor of the measure is reputed to have told the Assembly: "My machine will take off a head in a twinkling, and the victim will feel nothing but a sense of refreshing coolness. We cannot make too much haste, gentlemen, to allow the nation to enjoy this advantage." The particular type of machine adopted several years later was suggested to a committee by Dr. Antoine Louis, secretary of the Academy of Surgeons. The first machine was an adaptation of an Italian decapitation device and was made under Dr. Louis's direction by a German harpsichord maker named Schmidt. On March 25, 1792, the National Assembly called it the *louisette*, after Dr. Louis, but soon they began to call it the *guillotine*, after the man who first proposed decapitation as the general method of execution and who later advocated adoption of the machine designed by Dr. Louis. The first public demonstration of the guillotine was April 25, 1792, when a highwayman named

Pelletier was decapitated. Dr. Louis died a natural death a few weeks later. Dr. Guillotin was imprisoned during the Reign of Terror and was in constant danger of becoming a victim of the machine named after him, but he was released and permitted to practice his profession until he died a natural death in 1812 at the age of seventy-six. Soon after the guillotine was introduced in France, a Bavarian named Deibler was employed to operate the machine and the office of high executioner became hereditary in his family. The French popularly refer to the guillotine as "the Widow" or *Madame de Paris*, and to the executioner as *Monsieur de Paris*. Henri Anatole Deibler, a great-grandson of the first *Monsieur de Paris*, died at seventy-six in 1939. He executed 400 *clients*, as he called them. The legend that the inventor of the guillotine was himself guillotined is really a perversion of another story. In 1574 James Douglas, fourth Earl of Morton and regent of Scotland, had a decapitating machine removed from Halifax in Yorkshire, England, to Scotland for the purpose of beheading several noblemen condemned for rebellion. This instrument, somewhat like the later guillotine except it had no turning plank on which to bind the victim, was known as "the Maiden." On June 2, 1581, the earl himself was executed by the Maiden for implication in the assassination of Lord Darnley, second husband of Mary Queen of Scots. An old Scottish saying is, "He that invented the Maiden first hanselled it," *hansel* meaning "to use for the first time."

Why is a kind of thread called worsted?

Worsted, pronounced *WOOS-ted* or *WOOR-sted* and applied to a firmly twisted yarn or thread spun of long-staple wool combed to lay the fibers parallel, is derived from the name of a town in Norfolk-shire, England, where this kind of thread or yarn was first made. The name of the town is now spelled *Worstead*, but formerly it was spelled *Worsted*. In the fourteenth century, when Edward III imported Flemish weavers to improve the English woolen industry, Worstead had as many thousand inhabitants as it now has hundreds and it was a prosperous market and manufacturing town. Worstead, reduced to a mere village, no longer has a weaving industry and has only a fourteenth-century church as a relic of its past greatness. Chaucer employed *worsted* and apparently it was in use already in the twelfth century. At first the carpets, hosiery, cloth and other fabrics made of worsted thread or yarn were used only by the common people; hence Shakespeare's "worsted-stocking knave" (*King Lear*) as a term of contempt. Nowadays a trade distinction is made between woolen and

worsted goods. Ordinary woollens are made from carded short wool. The woolen thread is soft and composed of crisscross fibers, leaving the cloth soft and with the pattern almost concealed by the nap. On the other hand, worsted is made from long threads of wool, that have been twisted hard after the fibers have been combed until they are parallel, leaving the cloth firm and with a definite pattern.

Are white horses albinos?

Cases of albino horses are known, but ordinary white horses are not born white. Horses of certain colors, particularly dappled grays, become lighter and lighter as they grow older until they become pure white. Such horses do not give birth to white colts and white colts are virtually unknown. Many Arabian horses are light gray at birth and often they become pure white at the age of four or five years. Of the ancient Germans, the Roman historian Tacitus wrote: "It is peculiar to this people to seek omens and monitions from horses. Kept at the public expense, in these same woods and groves, are white horses, pure from the taint of earthly labor; these are yoked to a sacred car, and accompanied by the priest and the king, or chief of the tribe, who note their neighings and snortings. No species of augury is more trusted, not only by people and by the nobility, but also by the priests, who regard themselves as the ministers of the gods, and the horses as acquainted with their will." This probably accounts for the fact that a white horse was the symbol of the early Saxons in Britain. The White Horse in Berkshire and other similar sketchy outlines of horses on hillsides in England are believed to be survivals of the ancient Teutonic belief that white horses were sacred. From the same source may come the ancient notion that white horses are particularly suitable for use in formal processions and similar ceremonies. In parts of southwestern Asia the albino elephant was worshiped and among the Plains Indians an albino buffalo was looked upon as a sacred animal.

Where is Lake Chargoggagoggmonchauggagoggchaubunagungamaug?

Lake Chargoggagoggmonchauggagoggchaubunagungamaug is a beautiful body of water lying within the limits of Webster, Massachusetts, and near the Connecticut line. It has an area of almost two square miles and is noted chiefly for its unusual name, which is believed to be a combination of the names of three Algonquian Indian villages that once stood on the shores of the lake, with a termination meaning "fishing place at the boundary" thrown in for good measure. The lake

has three divisions, upper, middle and lower, and according to a popular story two Indian tribes living on opposite ends of the lake had a long dispute as to which tribe had the right to fish in the middle section. Finally they framed a treaty providing that each tribe had exclusive fishing rights in its own end of the lake, but neither had the right to fish in the middle, and they applied to the lake a name made up from the terms of the treaty and meaning: "You fish on your side; we fish on our side; nobody fish in the middle." The word is pronounced *Char-GOGG-a-GOGG-mon-CHOWG-ga-gogg-CHOW-bun-a-gung-a-mogg*. The average native of the region is satisfied to call it simply Lake Chaug. In 1932 a committee appointed by the commonwealth to determine the correct spelling of place names in Massachusetts decided that *Chargoggagoggmonchauggagoggchaubunagun-gamaug*—forty-four letters—is the correct spelling of the name of this lake. Formerly the name was often written *Chargoggagoggmanchaug-gagoggchaubunagungamaugg*.

Who invented cellophane?

The transparent wrapping material known as cellophane is essentially viscose or modified cellulose solidified into thin sheets instead of into threads as in rayon or artificial silk. In fact the two products are the same until the one is reduced to threads and the other is cast into sheets. So far as the invention or discovery of cellophane can be ascribed to any one person the credit belongs to Dr. Jacques E. Brandenberger, a Swiss chemist, who was born in 1872 and who graduated from the University of Bern. About 1900, while employed as a chemist in a textile factory in the Vosges district of France, he made thin sheets of viscose to combine with cotton fabric in attempting to produce a tablecloth impervious to dirt. Thus, by accident as it were, he stumbled on cellophane. No doubt other chemists had made a similar product, but Dr. Brandenberger was the first to see its commercial value. He called it *la cellophane*, from the first syllable of *cellulose* and Greek *phaneros*, "transparent" or "glasslike." The name, of course, was suggested by the fact that the new product, like rayon, is made of modified wood pulp or other forms of cellulose treated with a caustic soda solution and carbon disulphide. By 1913 Dr. Brandenberger had improved his product greatly, had obtained patents on his process in Europe and the United States and had induced a French rayon firm to supply capital with which to produce cellophane commercially. The inventor and two of his associates made a journey to the United States in 1913 and granted to the Du Pont

Company exclusive North American rights in the Brandenberger process, receiving as consideration a percentage of the stock in the subsidiary firm organized to manufacture cellophane. Although *cellophane* originated as a registered trade-mark, the Du Pont Company in 1941 abandoned its claim to the exclusive right to the use of the term after the federal courts in several decisions had declared in effect that *cellophane* is a generic term for a product that no other word or combination of words adequately describes. At first cellophane was used for wrapping candy boxes and cosmetics and it did not become really popular as a wrapping material until after it was made moisture-proof. Cellophane was first used on a large scale for wrapping cigarettes in 1930. Now the different kinds of articles wrapped in cellophane are numbered by the thousands. Though the product will burn if ignited, it is nonexplosive, and it is so substantial in spite of its transparency that no simple solvent will dissolve it. During the First World War cellophane was widely used by the French in making eyepieces for gas masks.

What is the purpose of the monocle?

The monocle, a single eyeglass worn fixed in the eye socket, was originally designed for persons with defective vision in one eye only. In theory the monocle not only corrects the vision of the eye in which it is worn but also relieves the strain on the other. It may serve a real purpose when made by an optician to fit a particular eye. Though sometimes worn by spat-wearing and cane-carrying dandies and "bogus counts" for effect alone, even at the present time the monocle very rarely is worn entirely for ornament. *Monocle* is a hybrid word of French origin, a fact suggesting that the single eyeglass may have been a French invention. The word was originally formed from Greek *monos*, "sole," and Latin *oculus*, "eye," and literally means "one eye." No use of the term in English earlier than 1858 is listed in the Oxford dictionary. Monocles may be older than spectacles. Emperor Nero was nearsighted and used a concave emerald to get a better view of the gladiatorial combats. The idea of the monocle may have been suggested by the "peering glasses," still used by watchmakers and connoisseurs of paintings. The monocle became fashionable in England in the time of Queen Anne. Johann George Keyssler, European traveler and writer, recorded that in 1740 a diplomat named Philip von Stosch wore a single eyeglass in Rome. In the United States the monocle is regarded not only as an indispensable part of the outfit of a European fop but also as the universal attribute of the typical stage

Englishman of the upper classes. U. S. Grant while president-elect refused to appoint John Lothrop Motley, the historian, to a place in his cabinet because "he parts his hair in the middle and wears a single eyeglass." The tendency of Americans to ridicule the monocle as the badge of social snobbishness and affectation has led many Englishmen of a practical turn of mind seriously to object to the sending of any monocled diplomat to represent their country at Washington. As a matter of fact, monocle wearing is a continental rather than a British custom. Many scholars, statesmen, soldiers and businessmen of the continent have been addicted to the single eyeglass. For generations the monocle was a favorite among German army officers. Armand Calinescu, the Rumanian premier who was assassinated in 1939, lost an eye in childhood and habitually wore a black monocle. Monocles were once common in the British army because spectacles were forbidden while single eyeglasses were not. In 1943 the British Admiralty ruled that a naval officer might choose between wearing spectacles or a monocle if it did not interfere with the efficient performance of his duties.

What country was named after a circle on the earth?

The Republic of Ecuador (*La Republica del Ecuador* in Spanish) was named after the equator, because that country is crossed by the great circle of the earth. *Equator* is spelled *ecuador* in Spanish. In French the South American country is called *Equateur* and in Italian *Equatore*. Although the equator crosses Brazil, Colombia and some territory long claimed by Peru, what is now Ecuador was singled out for the name because the Spanish invaders approached the region from the west and Ecuador is the only South American country whose Pacific coastline is intersected by the equator. Before it became an independent nation in 1830 Ecuador was one of the three grand departments of the Republic of Colombia. In 1927 the Ecuadorian government erected on the equator near Quito a monument of pink granite surmounted by a globe. Quito was an ancient Indian town when it was captured by the Spanish in 1534 and is one of the oldest capitals in the Western Hemisphere. It lies fifteen miles south of the equator at an altitude of some 9,400 feet and is one of the highest capitals in the world. Guayaquil is one of the largest ports on the Pacific coast of South America and is known as "the Pearl of the Pacific." The Guayaquil-Quito railroad is regarded as a remarkable engineering feat. At Naris del Diablo (Devil's Nose) the train ascends 2,000 feet in a few minutes over a dangerous zigzagging road cut in

solid rock along a mountainside supported by huge retaining walls. The *sucre*, the monetary unit of Ecuador, received its name from General Antonio José de Sucre, a lieutenant of Simon Bolivar and second only to the great liberator himself in the contribution he made to the liberation of South America.

What did King John do at Runnymede?

It is commonly said that King John "signed" Magna Charta at Runnymede June 15, 1215. Actually Magna Charta was not signed at all, although it was "sealed." No signature or writing of any kind by the hand of John is extant and it is doubtful whether he could write. Runnymede (literally "Running Meadow") lies between Staines and Windsor on the south bank of the Thames in Surrey County. John and his army camped on the field opposite the rebellious barons. The document drawn up was inspired by the charter granted by Henry I about 1100 and was in the nature of a treaty or articles of capitulation in which the king agreed to respect certain civil and church rights, to correct abuses and to redress grievances. It was written in Latin, like all public documents of the time, and was dated June 15, 1215, although it was not completed, sealed and delivered until four days later. A copy was sent to each cathedral with orders that it be read publicly twice a year. Four of the original copies still exist, two in the British Museum and two in the Lincoln and Salisbury cathedrals. The Lincoln cathedral copy, the most complete and accurate, is written in a fine Norman hand on parchment pages about seventeen inches square. In 1939 this copy was sent to the United States and exhibited at the New York World's Fair. It was kept in the United States during the Second World War for safety and returned to Lincoln Cathedral in 1946. The Latin text contains about 2,500, the English translation about 5,000 words. One of the copies in the British Museum is part of a collection made by the antiquary Sir Robert Bruce Cotton (1571-1631). Of this copy Isaac D'Israel wrote in *Curiosities of Literature*: "Sir Robert Cotton one day at his tailor's discovered that the man was holding in his hand, ready to cut up for measures—an original Magna Charta, with all its appendages of seals and signatures. This anecdote is told by Colomies who long resided in this country; and an original Magna Charta is preserved in the library exhibiting marks of dilapidation." King John repudiated Magna Charta on the ground that he had been coerced to grant it, and the pope released him from his promises, but under John's son and successor, Henry III, the document, considerably

amended, was confirmed in 1216, 1217 and 1225. It is the draft of 1225 that is regarded as an English statute, the keystone of English liberty and the "sheet anchor" of the British constitution. Copies of the original of this version are rarer than copies of the original charter of 1215—there being only two extant. An inscription on a monument in Tewkesbury Abbey says, "Magna Charta is the law, and let the King look out," and is supposed to date back to about 1250. In a speech in the House of Commons in 1628 Sir Edward Coke declared: "Magna Charta is such a fellow that he will have no sovereign." *Magna Charta* is medieval Latin for "Great Charter." There is a difference of opinion as to whether the second element should be *charta* or *carta*. It is pronounced *KARR-ta* no matter which way it is spelled. Latin *charta* originally signified a leaf of papyrus. Later it came to mean a sheet of writing paper, tablet and document. Sometimes in England, owing perhaps to Norman French influence, it was spelled *carta*. It was spelled *carta* in the version of the Great Charter of 1215 and *charta* in that of 1225. In 1946 the House of Lords, while considering a bill to authorize the British Museum to lend the Lacock Abbey copy of the charter of 1225 to the Library of Congress, adopted a resolution ordering the *h* dropped from *charta* in the document on the theory that it had been inserted by a careless copyist. The Oxford and Webster's New International dictionaries give *Magna Charta* as preferable, while some authorities prefer *Magna Carta* and brand *Magna Charta* as "common but erroneous." It appears that *Magna Charta* is etymologically preferable but that *Magna Carta* is gaining favor in modern usage.

What is a White Russian?

In English *White Russian* has two distinct meanings and is confusing. Strictly speaking, the term does not refer either to the complexion of the people whom it designates or to their political doctrines. As constituted before the Revolution of 1917, European Russia proper consisted of three grand divisions—Great Russia, Little Russia and White Russia—and the emperor was styled "the Czar of All the *Russias*" (not *Russians*). Three racial groups corresponding to these geographical divisions have been distinguishable among the Russians for more than a thousand years. Great Russia consisted of the central and northeastern provinces, and the language of its inhabitants, particularly the Moscow dialect, was the literary and official language of the empire. Little Russia, second of the three Russias in area and

population, was the name given to the southern provinces inhabited by the Ukrainians and the Cossacks. White Russia (the name is a literal translation of Russian *Belorussia*) was a comparatively small group of western provinces bordering on Poland and the Baltic states. The White Russians intermingled to some extent with the Great and Little Russians, but they were influenced most by the Poles and the Lithuanians. Their language, spoken by fewer than ten million people living chiefly in the old provinces of Vitebsk, Mohilev, Minsk and parts of Pskov, Smolensk, Cheringov and Vilna, resembles Polish more than it does literary Russian and it has a very meager literature. After the dismemberment of the Russian Empire, White Russia became one of the constituent units of the Union of Soviet Socialist Republics with Minsk as the capital, and most White Russians became "Reds." Just why they were originally called White Russians is not known for certain. They have light-brown eyes and light-brown hair with a reddish tinge and some authorities consider them the purest Caucasian stock among the three grand divisions of Slavs in Russia. One theory is that the country was called White Russia (*Belorussia*) to contrast its blond inhabitants with the darker Russians of Mongol and Turkish blood who lived farther to the southwest. Central and southern Russia used to be called "Black Russia" from its black soil, and another theory is that White Russia was so called merely in contrast to Black Russia. The Russian word for "white" may also mean "free"; and another theory is that the White Russians were so called because they were more independent and long resisted control by the Great Russians. Still another theory, the one generally accepted, is that the White Russians received their name from their characteristic costume of homespun flax—white smock, bast shoes, white leggings and white coat. During and after the Revolution of 1917 those Russians who fought against the Bolsheviki wore white bands on the right arm. Since the Reds wore similar uniforms they called the anti-Soviet soldiers "White Guards" or simply "Whites." In English this became "White Russian" and through this process the term came to signify any anti-Bolshevik Russian.

What are the doldrums?

When a person is suffering from low spirits or mental depression he is said to be "in the doldrums." The phrase is synonymous with "in the dumps." *Doldrums* is an old English word of uncertain derivation, supposed by some authorities to be related in origin to *dull* and *dolt*. *The doldrums* is the popular name for a shifting oceanic zone lying

near the equator between the trade winds and noted for its calms and light, baffling winds, which in olden days sometimes prevented progress of sailing vessels for weeks. In that region the sky is overcast much of the time, the atmosphere is hot, humid and oppressive and the frequent rains are generally accompanied by thunderstorms. The trade winds are northeasterly in the Northern Hemisphere and southeasterly in the Southern. The southeast trade wind blows over an area extending from the equator to twenty-five degrees south, while the northeast trade wind extends from about ten to thirty degrees north. The equatorial belt of low pressure between these two winds is the region known as the doldrums. Thus it will be seen that the true doldrums extend from the equator to about ten degrees north and do not include any part of the Southern Hemisphere. There is, however, a corresponding low-pressure belt south of the equator in the Pacific. The doldrums are a seasonal belt, shifting from slightly north of the equator in the northern winter to farther north in the northern summer. The trade winds blow a regular trade or course toward the thermal equator, a line that shifts with the sun between thirty degrees north and thirty degrees south, but they are deflected to northeast and to southeast, respectively, by the rotation of the earth. *In the doldrums* first appeared in English about 1811 as slang. Apparently it was a sea term and referred to a ship becalmed in the doldrums, where the trade winds neutralize each other.

What are the Pontine Marshes?

The Pontine Marshes are a low, marshy district in Italy some thirty miles southeast of Rome. Hemmed in from the sea on one side by elevated sand dunes and from the rest of the Roman Plain by higher lands, the Pontine Marshes are about twenty-five miles long and vary in width from five to eleven miles. The soil is fertile and once supported a considerable population of Volscians, who made the region habitable and productive by an elaborate drainage system. After the Romans conquered the Volscians in 358 B.C. the district degenerated into a pestilential waste and no man's land haunted by outlaws. In Latin it was called *Pomptinae Paludes*, and even in English the name is sometimes written *Pomptine* Marshes. Apparently it is derived from *Suessa Pomertia*, the name of a Volscian town. In time the Pontine Marshes became a source of concern to the Romans, not only because of the loss of 150,000 acres of land near the capital but also because the noisome exhalations from stagnant waters were believed to cause the intermittent fevers that continually afflicted their people.

Rome had her first struggle with the Pontine Marshes in 312 B.C. when the censor Appius Claudius began to build the Appian Way from the Eternal City to Naples and when some of the swamp had to be drained because the famous road was driven straight as an arrow through the heart of the marshes to Terracina on the coast. In 160 B.C. the consul Cornelius Cethegus attempted to drain the Pontine Marshes and reclaim the land for agriculture, but his efforts to plant Latin colonies there were only partially successful. Julius Caesar, conceiving a more ambitious project, planned to divert the Tiber through the region, but his project died with him. Augustus, Trajan and several other emperors dreamed of redeeming this fertile land, but in the second century A.D. Juvenile still referred to the Pontine Marshes as a sort of badlands. Later Theodoric the Goth and about eighteen different popes tackled the problem from time to time. At the turn of the thirteenth century Pope Boniface VIII drained a part of the swamp by means of a great canal, and in 1778 Pius VI took up the work and drained the entire district in ten years. Even then, however, inundations in winter and malaria in summer prevented people from settling there permanently and the few scattered herdsmen and farmers who made a living there sought refuge in the hills in the warm season. In 1899 the Italian government appropriated seven million lire to renew the work of reclamation, which was interrupted by the First World War; but after that conflict the Fascist government headed by Benito Mussolini turned to the task in earnest. Canals were dug to drain stagnant pools and to eliminate mosquito breeding places, roads were built, towns and community centers were established and thousands of Italians began to farm land that had not been tilled since the Romans overcame the Volscians twenty-two centuries earlier. Much of this work was undone when the Germans flooded part of the district in their efforts to defend Rome during the Second World War.

What is the largest rodent?

The capybara (also called carpincho) of tropical South America is the largest known rodent or gnawing mammal now extant. This animal looks somewhat like a giant guinea pig, to which it is closely related, and attains a length of 4 feet, a height of 2, a girth of 3 and a weight of 150 pounds. It has a heavy flat head, blunt nose, small ears, a stoutly built body, stumpy tail, dark-brown but coarse and rough fur and is partly web-footed. Being largely aquatic in habits, it lives along the banks of rivers and the margins of lakes, where it divides its time between swimming and feeding on roots, shoots and

other vegetable matter on land. Its teeth are reputed to be able to cut through corrugated iron. As a rule capybaras congregate in droves and continually emit low, abrupt grunting sounds. The flesh is palatable, being widely eaten by the natives, and the tanned hide corresponds to pigskin of good quality. *Capybara* is a Portuguese rendering of the native Brazilian name of the animal and is pronounced *kap-i-BAY-ra* or *kap-i-BAH-ra*. Skeletal remains indicate that much larger animals of this type once inhabited South America. It is estimated that a giant beaverlike aquatic rodent that lived in North America up until the last ice age attained a height of 4 feet and a weight of 500 pounds. The beaver is the largest extant rodent in North America and sometimes attains a weight of fifty or sixty pounds. The Canada porcupine or "quill pig," which occasionally attains a weight of forty or fifty pounds, ranks next in size among North American rodents.

What is No Man's Land?

No Man's Land as used during the First World War was merely a new application of an old term. In the fourteenth century No Man's Land was a piece of waste ground just outside the walls of London that was often used for executions. Referring to this land about 1350, Thomas Fuller in his *Worthies of England* (1662), wrote: "There happened so grievous a pestilence in London, that . . . the dead might seem to jostle one another. . . . Whereupon this bishop bought ground near Smithfield. It was called No-man's-land, . . . as designed and consecrated for the general sepulture of the diseased." Later we find the term frequently employed to describe any debatable territory, especially on the border of two countries. In *Robinson Crusoe* (1719) Daniel Defoe wrote: "This was a kind of Border, that might be called no man's Land." The term has been used as a specific name of districts in Great Britain, South Africa, Australia, the United States and other countries. In the United States alone, *No Man's Land* has been the name of several districts, including an island near Martha's Vineyard in Massachusetts. One of the most famous districts to bear the name was a large strip of territory north of Texas 35 miles wide and 167 miles long. This No Man's Land was ceded by Texas to the federal government in 1850, and between that date and 1890, when it was incorporated into Oklahoma, it had no particular form of government and became notorious as the refuge of outlaws and recalcitrant Indians. There were also large tracts known as No Man's Land in Colorado, Louisiana and the Dakotas and

Minnesota. Although not included in any of the specific purchases, the title of the United States government was established by treaties with the Ute Indians, the Spanish government and the British government. It was natural that a descriptive term so widely known should have been revived during the First World War to designate the narrow strip of unoccupied land lying between the front trenches of opposing armies. Trench warfare on a large scale made the term peculiarly apt. No Man's Land, which on the western front varied in width from a few yards to a quarter of a mile or more, was usually strewn with dead bodies, fragments of shells, broken fences, riddled trees and other wreckage of war. *No Man's Land* in this connection appeared in print in London as early as September 15, 1914, in a narrative signed *Eyewitness*.

Does any species of snake eat other snakes?

Several species of snakes kill and eat other snakes. The king cobra of southeastern Asia, perhaps the most deadly and dangerous of all venomous snakes, feeds exclusively on other snakes, chiefly small nonvenomous species, which it swallows head first. Among the natives of India it is known as the "snake-eating snake." King cobras in captivity generally refuse to eat anything but snakes. American king snakes, of which there are five species, kill and eat other snakes and seemingly go out of their way to attack them. This species is nonvenomous and kills by constriction. For its size it is the most powerful of all the constrictors and does not hesitate to attack snakes of another species several times larger than itself. Although its normal food is rats, mice and other small animals, the king snake is the terror of all other species of snakes and even attacks and kills moccasins and rattlesnakes. To what extent, if any, snakes are immune to the poison of other snakes when bitten is not known definitely. The king snake is believed to be immune to the venom of snakes of the rattlesnake type, but not to that of the coral snake type. Black snakes and blue racers are also cannibalistic to some extent and occasionally kill and eat smaller snakes.

What archbishop is Primate of England?

The title of the Archbishop of York is "Primate of England" and that of the Archbishop of Canterbury is "Primate of *All* England." The annual salary of the Primate of England, who is the second highest clerical officer in the Church of England, is £9,000, while that of the Primate of All England, who is the highest clerical officer, is

£15,000. In several instances the Primate of England has become Primate of All England. A similar situation exists in the Anglican Church in Ireland. The Archbishop of Dublin is "Primate of Ireland" and the Archbishop of Armagh is "Primate of All Ireland." The king of England is by law the head of the Church of England, and has the right, with the counsel and assent of the Assembly of the church, to appoint all archbishops and bishops. One of the functions of the Primate of All England is to administer the oath at the coronation of English sovereigns. He ranks next to members of the royal family and takes precedence over all other peers. It seems that in the twelfth century the Archbishop of York claimed equality with, if not precedence over, the Archbishop of Canterbury. Both claimed the title "Primate of England." An old chronicle says that at the Synod of 1176 sat "as in his proper place, Richard of Canterburie, when in springs Roger of York, and finding Canterburie so fairly seated, sits him down in Canterburie's lap. Canterburie's servants plucked him thence and buffeted him to some purpose." Tradition says the controversy was settled by giving the Archbishop of Canterbury the title "Primate of *All* England." In 597 A.D., when Aethelbert was king of Kent, St. Augustine arrived at Canterbury, established a monastery, founded a diocese and began a cathedral. The Kentish king and most of his subjects were pagans, but his wife, Bertha, was a Christian. Aethelbert soon embraced Christianity and 10,000 of his people were baptized on Christmas Day. Since that time Canterbury has been the ecclesiastical metropolis of England. St. Augustine received episcopal consecration from the Archbishop of Arles in Gaul and is regarded as the first Archbishop of Canterbury. The preamble of Magna Charta, dated June 15, 1215, refers to "Stephen, Archbishop of Canterbury, Primate of all England." The exact number of St. Augustine's successors as Archbishop of Canterbury is not known for certain. Geoffrey Francis Fisher, who became Archbishop of Canterbury in 1943, is generally considered the ninety-seventh, although some authorities regard him as the ninety-eighth and others the ninety-ninth. Only two have resigned—Randall Thomas Davidson in 1928 and Cosmo Gordon Lang in 1942—both because of advanced age. Frederick Temple (1896-1902) and William Temple (1942-1944) have been the only father and son to be "Primates of All England." During a famous controversy with the crown Archbishop Thomas à Becket was murdered at Canterbury in 1170 and four years later King Henry II went to the scene of his murder to do penance. The fame of Canterbury greatly increased after Becket was canonized and a shrine to him

was established. For centuries Canterbury was the destination of thousands of pilgrims. Geoffrey Chaucer's *Canterbury Tales* consist of stories imagined by the poet to have been told by a group of pilgrims on the way to Canterbury. The easy, ambling gait adopted by mounted pilgrims to St. Thomas à Becket's shrine came to be known as the Canterbury pace or gallop, and the term survives in *canter*. These religious pilgrimages were stopped in 1538 by Henry VIII and about the same time the Archbishops of Canterbury ceased to be Catholics and became Protestants. A round chapel in the Canterbury Cathedral known as "Becket's Crown" contains the marble "chair of St. Augustine" in which the archbishops are still enthroned. For centuries Lambeth Palace in London on the south bank of the Thames has been the principal residence of the Archbishops of Canterbury. In the Church of England the wife of a dignitary receives no rank or title from her husband. For instance, the wife of the Archbishop of Canterbury is not Lady Canterbury or the Archbishopess, but merely Mrs. So-and-so.

What is asbestos composed of?

Asbestos is a mineral found in a crystalline fibrous state. The long, silky, flexible fibers are capable of being spun and woven or felted into a kind of clothlike fabric that has a wide range of commercial uses because of its incombustible and insulating properties. The name is derived from a Greek word meaning "inextinguishable" or "indestructible" and was applied originally by the ancients to a fabulous stone that was supposed to produce an unquenchable flame when once set on fire. There are three important varieties of asbestos—anthophyllite, amphibole, and serpentine. The first two are silicates of lime and magnesia, and the third is a hydrous silicate of magnesia. Asbestos shares with coal and sulphur the distinction of being one of the few nonmetallic minerals of great use to mankind. Although deposits occur in many parts of the world, notably in southern Africa and Russia, the chief source of the mineral in America is the region around Asbestos, Quebec Province, Canada. At the present time Canada produces about 60 percent of the world's asbestos, while the United States produces less than 5 percent. Where the rock is near the surface, as in Quebec, it is blasted and quarried; where it lies in pit formations it is mined by driving shafts. After being quarried or mined the rock is carefully combed by hand for the longest and finest fibers. In its natural state asbestos resembles bundles of spun glass. This "mineral flax" is then carded and woven on looms into

textiles almost as readily as raw cotton or wool. Many textiles are produced by combining asbestos with canvas, felt or other nonmineral substances. The ancients, who called it "salamander's wool" from the belief that the incombustible substance was derived from that animal, held asbestos in great awe because it was not affected by fire, and they wove the fibers into napkins, shirts, coats and tablecloths, as well as "funeral dresses for kings," as Pliny expressed it. These latter garments consisted of shrouds wrapped around the bodies of dead rulers to preserve their ashes pure during the process of cremation. Charlemagne, according to tradition, had an asbestos tablecloth that was regularly cleaned by throwing it into the fire, much to the astonishment of the guests at the court of the emperor of the Franks. Marco Polo, referring to a province in the interior of Asia, said of asbestos about 1300 A.D.:

A substance is likewise found of the nature of the salamander, for when woven into cloth, and thrown into the fire, it remains incombustible. The following mode of preparing it I learned from one of my travelling companions named Curificar, a very intelligent Turkoman, who had the direction of the mining operations of the province for three years. The fossil substance procured from the mountain consists of fibers not unlike those of wool. This, after being exposed to the sun to dry, is pounded in a brass mortar, and is then washed until all the earthy particles are separated. The fibers thus cleansed and detached from each other, they then spin into thread and weave into cloth. In order to render the texture white, they put it into the fire, and suffer it to remain there about an hour, when they draw it out uninjured by the flame, and it becomes white as snow. And so again whenever it becomes dirty it is bleached by being put in the fire. Of the salamander under the form of a serpent, supposed to exist in fire, I could never discover any traces in the eastern regions. It is said that they preserve at Rome a napkin woven from this material, sent as a gift from the Great Khan to the Pope to make a wrapper for the Holy Sudarium of Jesus Christ.

The art of weaving asbestos seems to have been virtually forgotten during the Dark Ages. When Benjamin Franklin went to England in 1724 he took with him an asbestos purse, "to prevent money from burning holes in his pockets." In his *Autobiography* he wrote: "I had brought over a few curiosities, among which the principal was a purse of the asbestos, which purifies by fire." Sir Hans Sloane, physician, naturalist and member of the Royal Society, bought the curiosity. Under date of June 2, 1725, Franklin wrote to Sir Hans: "Having lately been in the northern parts of America, I have brought from thence a purse made of the stone asbestos, a piece of the stone, and a

piece of wood, the pithy part of which is of the same nature, and called by the inhabitants salamander cotton." It was not until about 1870, when such textiles were made in Italy, that asbestos became commercially important in modern times.

Where did alfalfa come from?

The original home of the plant commonly called alfalfa in America and lucerne in Europe seems to have been central and southeastern Asia, particularly the region on the eastern shores of the Mediterranean. It was probably first cultivated as a crop by the Persians, who, according to tradition, carried it into Greece when they invaded that country in 590 B.C. Alfalfa was introduced into Italy at the beginning of the Christian era and was widely cultivated in the time of the early Caesars. It was quickly naturalized in Europe whence it was taken to all parts of the earth, now being one of the staple forage crops of every continent of the Old World and easily ranking as the chief leguminous plant in the Western Hemisphere. Spain played an important part in the dissemination of lucerne. Although some authorities say it was introduced into Spain about 7 A.D. from Italy, it probably was carried into that country by the Moors in the eighth century, a fact that led the Spanish to call it *alfalfa*, from an Arabic word signifying "best fodder." Naturally the Spaniards took this valuable pasture and hay plant with them when they established colonies in the West Indies, Mexico, South America and other parts of the New World during the sixteenth century. Some alfalfa was grown in what is now the southwestern part of the United States after it was carried there from Mexico at an early date, but first attempts to introduce the plant into the English Colonies on the Atlantic seaboard were not successful. Eliza Lucas, who married Charles Pinckney, experimented with lucerne on her plantation near Charleston, South Carolina, in 1744, but it did not thrive and died out. George Washington experimented with "Choice Lucerne" at Mount Vernon as early as 1760. Twenty-five years later, October 4, 1795, Washington wrote to Thomas Jefferson: "Lucerne has not succeeded better with me . . . than with you; but I will give it another and a fairer trial before it is abandoned altogether." J. Hector St. John Crèvecoeur (1731?-1813), French-born American author of *Letters from an American Farmer* (1782), is credited with the introduction of alfalfa into the northern states. But alfalfa did not assume much importance as a crop in the United States until it was introduced into California from Chile in 1854, after which time it began to

extend rapidly over the irrigated sections of the western states. Today alfalfa is the most important hay crop in the United States and an important pasture crop. This three-leaved cousin of clover is notable because it can be grown in many climates and soils, is high in protein content and improves rather than saps the soil. It is considered a good soil builder because it is deep rooted. Alfalfa sends its roots deeper than any other cultivated crop. A plant only two or three feet high will sometimes extend its roots to a depth of forty or fifty feet in search of water, of which it is a great consumer. From two to six mowings a year are possible from an established alfalfa meadow. The Federal Seed Act requires that alfalfa seed imported into the United States must be dyed for identification purposes. Seed grown in Canada must be colored iridescent violet, while that grown in other countries must be colored green.

Who is the black pope?

The general of the Society of Jesus (Jesuits) is sometimes referred to as the black pope from his customary black robes and the fact that during certain periods he was believed to have an influence in the Catholic Church second only to that of the pope himself. This order was founded in Paris in 1534 to support the Catholic Church, to defend the Papacy and to propagate the faith among the heathen. The Society of Jesus became a religious order of the Catholic Church in 1540 when Pope Paul III approved its constitution. St. Ignatius Loyola (1491-1556), the Spanish founder of the order, was elected the first general in 1541 and he served until his death from the "Roman fever." The motto of the order is, *Ad maiorem Dei gloriam*, "To the greater glory of God." Members of the Society of Jesus are popularly called Jesuits. St. Ignatius Loyola and his associates never used this term. It was first used about 1550 in derision by the enemies of the order. *Jesuit* is an Anglicized form of *Jesuita*, from Latin *Jesu*, "Jesus," and *ita*, a suffix signifying "belonging to," "connected with" or "member of." The founder had been a soldier and he incorporated certain military principles in the constitution of the Christian order of clerics that he established. The order is divided into provinces, and the general, who resides in Rome adjacent to Vatican City, is chosen for life by the General Congregation of fathers superior, corresponding to the Sacred College of Cardinals which elects the pope and which is sometimes referred to as the Catholic Senate or House of Lords. After the Jesuits had been expelled from Portugal, France and Spain, Pope Clement XIV in 1773 issued the Brief of Suppression by which

the order was suppressed throughout Christendom. The Jesuits were noted for their work as educators, and Catherine of Russia and Frederick the Great of Prussia, neither of whom was a Catholic, opposed the edict of suppression and protected the Jesuits within their borders because they wanted them as teachers. In 1814 Pope Pius VII re-established the Jesuits as a world order of the Roman Catholic Church. In 1942 the society had 50 provinces with a membership of about 27,000 priests, scholastics and brothers.

Why was the Turkish cap called a fez?

The red felt or woolen skullcap formerly almost universally worn by Turkish men received its name from Fez, a city in Morocco, where such caps were first made. Fez was long a seat of Arabian learning in Africa and is still one of the sacred cities of Islam. It contains 100 mosques, one of which, the Mosque of Karueein, is the largest in Africa. Until recent times Fez had a virtual monopoly on manufacturing fezzes. It was supposed that the crimson dye used to color the fez, made from a berry growing in the vicinity, could not be obtained elsewhere. The Arabs call this picturesque headgear the *tarbush* (English *tarboosh*). A typical tarboosh consists of a close-fitting, brimless truncated cone of red felt or wool with a black or blue tassel hanging from the middle of the top nearly to the edge of the bottom. Among the Arabs of the Near East the tarboosh is worn by men of the upper and middle classes either alone or as part of the turban (Turkish *tulbend*), which consists of a sash or shawl twisted about the tarboosh. Turbans have been worn by Orientals since ancient times. Herodotus says the skulls of the Persians were softer than those of the Egyptians, a fact that he attributed to the Persian turbans, which protected the head from the sun! Some Oriental turbans contain as much as twenty or thirty yards of the softest and finest muslin. This type of head-dress was probably adopted because the Oriental religions generally require the worshiper to bow his forehead to the ground while praying. Shakespeare alludes to this in *Cymbeline*, where Belarius says to Guiderius and Arviragus:

A goodly day not to keep house with such
Whose roof's as low as ours! Stoop, boys; this gate
Instructs you how to adore the heavens, and bows you
To a morning's holy office: the gates of monarchs
Are arch'd so high that giants may jet through
And keep their impious turbans on, without
Good morrow to the sun.

Mohammed enjoined all the faithful to make a pilgrimage to Mecca at least once in their lifetime, and those who have made the pilgrimage indicate the fact by wearing a tarboosh or turban of a special color—a green one in the Near East and a white one in the East Indies. Lord William Bentinck was recalled as British governor of Madras in 1807 for proscribing sepoy beards and turbans. Sultan Mahmud II, Ottoman emperor from 1808 to 1839, made the fez part of the Turkish dress. It was considered the special badge of a Turkish subject, who was compelled to wear it even though not a Mussulman. A Turk looked upon his fez as the symbol of his manhood and religion, the badge that distinguished him from unbelievers, and often a replica of the fez in stone was placed at the head of his grave. The fez has been abolished as part of the national costume in the Republic of Turkey, although such caps are still widely worn by Moslems in the Balkans, North Africa, the Levant and other regions once controlled by Turkey. As early as 1908 the Turkish army began the change in headgear by adopting a more modern cap. On November 25, 1925, the national legislature at Angora, under the direction of Atatürk, declared: "The members of the Grand National Assembly of Turkey, and the official and unofficial personnel of the departments of public administration, general and local, as well as of all institutions or establishments in general, are obliged to wear the hat adopted by the Turkish nation. The hat being the headgear of the Turkish population, the Government is opposed to all contrary usage." The counselor of the Turkish Embassy in Washington who supplied this translation said the edict indicated the tendency of his more progressive countrymen toward the adoption of the ways of modern civilization. As the fez symbolizes the Turkey of the sultans, the hat symbolizes the Turkish Republic. No other single change in Turkey eliminated so much color from the street scenes as the passing of the fez.

Is the Gila monster's bite fatal to man?

Naturalists disagree as to the extent of the ill effects of the bite of the large, odd-looking, "beaded" lizard known as the Gila monster, which inhabits sandy wastes in the Southwest and which is one of the only two known species of venomous lizards, the other being a first cousin in Mexico and other parts of Central America. The name of this creature arose from the fact that it first attracted notice in the valley of the Gila (pronounced *HEE-la*) River in Arizona. Formerly all lizards were believed to be venomous, and Shakespeare refers to this belief in *III Henry VI* when he has Queen Margaret use the

expression "venom toads, or lizards' dreadful stings." Until recently it was widely believed that the Gila monster's venom was similar to that of rattlesnakes and other venomous serpents and that it was fatal to man and the larger animals. It is now known that the venom-producing apparatus of this lizard is very inefficient compared to that of venomous snakes; its venom, supplied to grooved teeth by a gland on each side of the lower jaw, is not injected directly into the victim's flesh by the teeth but is mixed with the saliva in the reptile's mouth. That is why many authorities once supposed that persons who died from being bitten by Gila monsters were the victims of blood poisoning induced by the germ-laden saliva rather than of the direct effects of the venom. As a matter of fact, the poison gland of the Gila monster, like that of venomous serpents, is a modified salivary gland. To do a good job of poisoning the Gila monster must sink its teeth deep into the flesh. Although generally sluggish by nature, it strikes with lightninglike quickness, clamps its powerful jaws on its victim and holds on with a bulldog grip that often cannot be broken even by dismembering the monster. Undoubtedly the poison affects the human heart, and there are cases on record of persons who died from its effects, but ordinarily the venom produces no ill effects other than an irritation or painful soreness for several days. Fowl, guinea pigs, frogs and other small creatures are much more likely to die from the poison, but experiments show that it is not necessarily fatal to them. The Gila monster, like venomous serpents, is immune to its own poison. Scientifically it is known as *Heloderma suspectum*, while the species common in central and western Mexico is *Heloderma horridum*. Both species, during periods of plenty, develop fat tails, which serve as reservoirs of energy for times of food scarcity. In the natural state these lizards live chiefly on ants, but in captivity they seem to thrive on a mixture of raw eggs and ground raw meat. They sometimes attain a length of two feet. In captivity they often become quite tame.

Why is the wedding ring worn on the third finger?

The custom of wearing engagement and wedding rings on the "third finger" of the left hand is believed to have originated in an ancient belief that a very delicate nerve runs directly from that finger to the heart. The third finger on both hands was known as the "medical finger." Greek and Roman physicians used it to stir drugs and medical mixtures because they supposed no poisonous substance could come into contact with this finger without giving warning. According to Aulus Gellius this belief was mentioned in the Egyptian writings of

Apianus, who wrote at Alexandria in the second century A.D. During the Middle Ages the connection was supposed to be a blood vessel instead of a nerve. Henry Swinburne, an English ecclesiastical lawyer who died in 1623, left a quaint observation on this subject in his *Treatise of Spousals or Matrimonial Contracts*. "The finger on which this ring is to be worn," wrote Swinburne, "is the fourth finger of the left hand, next unto the little finger; because, by the received opinion of the learned and experienced in ripping up and anatomizing men's bodies, there is a vein of blood which passeth from that fourth finger unto the heart called *vena amoris*, love's vein." In those days the English began with the thumb in counting the fingers. Reference to the ring finger as the "fourth finger" in the marriage service is a survival of that usage. Now we generally say the engagement and wedding rings are worn on the "third finger." The right hand has long been the symbol of strength and authority, while the left hand has been the symbol of weakness and subjection. In Elizabethan times it became a fad for Englishwomen to wear the wedding ring on the thumb. Of course, the notion that the ring finger is connected with the heart in a peculiar way is without foundation. The fourth digit on the human hand is the least mobile, the least sensitive and the least used of all the digits, and accordingly it is the most satisfactory and convenient on which to wear a ring.

What trees are most likely to be struck by lightning?

In a general way it may be said that among the common larger forest trees, other things being equal, oaks and poplars are most frequently struck by lightning, while beeches and limes (lindens) are least frequently struck. There is a great deal of superstition and folklore associated with this subject. The druids of Britain looked upon the oak as the seat of the thunder-god because it seemed to be struck by lightning more often than any other species of tree they knew. Formerly it was widely believed in England that the beech is never struck by lightning. The Greeks and Romans believed that lightning could not strike the bay or laurel tree and it is said that Emperor Tiberius for that reason wore a wreath of laurel during thunderstorms. In Germany, France and perhaps elsewhere in Europe people used to gather the herb or shrub known as St.-John's-wort on the feast day of the saint after whom the plant was named and hang it in the windows of their houses, supposing it to be an infallible charm against lightning. A twig of hazel was sometimes employed for the same purpose, and a similar superstition existed in England, where country

people formerly planted the leek on housetops to protect the dwelling from the bolts of the thunder-god. Some of the American Indian tribes in time of storm sought shelter when possible under a black gum tree because they supposed it could not be struck by lightning. But it is now known that all these trees are occasionally struck by lightning and that no species of tree is entirely immune to lightning stroke. Lightning is an electrical charge seeking equilibrium. It follows the line of least resistance, which is another way of saying that it follows the best conductors. Trees, steeples, chimneys and other tall objects and structures in elevated and exposed locations are most likely to be struck. Among buildings isolated churches with high steeples rank high as lightning hazards. Statistics relating to the relative frequency with which various kinds of trees are struck by lightning are too imperfect to employ as the basis for a positive conclusion. Many factors are involved, such as the relative abundance of the species, the location of the particular tree in relation to other trees, the elevation of the land, the height of the tree, the nature of the soil and the condition of the roots. The meager data available suggest that, other things being equal, a few of the more common trees may be liable to lightning stroke in the following order: oak, poplar, elm, willow, pine, walnut, ash, lime, maple, birch and beech. No great reliance, however, should be placed on any such list until after a great deal more data have been collected. It is not true, as often said, that the majority of persons killed or injured by lightning are under trees when struck. Nevertheless the wisest plan is to keep away from trees during electrical storms. One is safer under a clump of trees than under an isolated tree and still safer in the open. The terrific heat generated when lightning strikes a tree often causes the sap to boil and evaporate. Valuable trees are sometimes provided with lightning rods.

What are the chances of being killed by lightning?

On the basis of imperfect statistics available it is estimated that only about one person out of a million throughout the world is injured or killed by lightning each year. The number merely injured by lightning is somewhat greater than the number killed by that cause. It appears that the percentage of persons injured and killed by lightning in the United States is considerably higher than that for most other large countries. But even in the entire United States only about 2,000 persons are struck by lightning each year and only about 500 of them are killed. The chances of being injured or killed by an automobile are hundreds of times greater than of being injured

or killed by lightning. No place on the earth is entirely free from electrical storms. In some parts of western equatorial Africa lightning is an almost daily occurrence during the rainy season. Lightning flashes over the earth continuously and one meteorologist estimated that it strikes somewhere on the average of fifty times a second or two billion times a year. Electrical storms occur rarely in the arctic and antarctic and are believed to occur at the North and South poles only about once in ten years. There is no part of the United States where electrical storms never occur, although violent thunderstorms do not occur in Hawaii and are comparatively rare on the Pacific coast. Only sixty-one electrical storms were reported at San Francisco during the thirty years from 1903 to 1933. On the average thunderstorms are twice as frequent in Ohio as they are in northern New England. Lightning casualties in the United States are most numerous among rural people, and the most dangerous section from the standpoint of lightning hazard is in the region of the upper Missouri Valley. Lightning does not always strike the earth or objects on it, as many people believe. It generally breaks between clouds and strikes upward as often as it does downward. Only about one bolt out of a hundred strikes the earth. Lightning strokes are more severe at low than at high altitudes. Flying birds are sometimes struck and killed by lightning. Most victims of lightning stroke are not struck directly but merely happen to be near a structure or object that is struck.

What is the capital of the Netherlands?

The Hague is the capital of the Kingdom of the Netherlands in the American sense of the term. It is the seat of the national government, the place where the parliament sits and the regular residence of the sovereign and of all foreign diplomats accredited to the Netherlands government. But the Netherlands regard Amsterdam as the capital of their country because it is historically, sentimentally and commercially their chief city. The Dutch point of view is illustrated by the following comment made some years ago by a counselor of the Royal Netherlands Legation at Washington in a letter to the author: "Amsterdam is the capital of the Netherlands. The Hague is the sovereign's residence as well as the seat of government." In the United States, *capital* is applied to a seat of government irrespective of its relative size or importance, while in many European countries the term is applied to the metropolis or most important city, whether or not it is the seat of government. The Hague is called the capital of the Netherlands because it is the seat of government, just as Albany

is called the capital of New York State and Washington, D.C., is called the capital of the United States. Amsterdam, the chief city of the province of North Holland, is on the Amstel, a canalized river flowing into the Y, an arm of the Zuider Zee. *The Hague* is the accepted English, and *La Haye* is the accepted French form of the official Dutch 's-*Gravenhage*. The accepted Dutch, English and French forms of the name all retain the definite article. The official Dutch name of the city is believed to be a corruption of *Des Graven's Behage*, literally "For the Count's Pleasure," referring to the fact that the place was one of the pleasure and hunting seats of the counts of Holland. Informally the Netherlanders often refer to the city simply as *Den Haag*. In 1260 Count William II made The Hague a residence and its importance increased until it became the home of the princely family. During the seventeenth century Amsterdam was the dominant city in the United Netherlands, but because of the jealousy of other provinces most of the affairs of state were conducted at The Hague. From 1806 to 1810 Louis Bonaparte, brother of Napoleon Bonaparte, was king of Holland, and in 1808 he transferred his residence and the central government from The Hague to Amsterdam. After Holland freed itself from French control the Prince of Orange was proclaimed sovereign at Amsterdam but soon afterwards he moved to The Hague. But the constitution then adopted designated Amsterdam the legal capital and provided that the rulers should always be crowned in that city, and the present constitution, although it does not designate Amsterdam the legal capital, requires that all royal baptisms, marriages and coronations must take place there and that the sovereign must spend at least eight days there each year.

When were envelopes first used in mailing letters?

It is not known who made the first envelopes. The Babylonians and other ancients covered clay and stone tablets with mud to protect the writing and to insure privacy. Envelopes for mailing purposes did not come into general use until the decade between 1839 and 1849, soon after the adoption of the adhesive postage stamp. Previously envelopes were very seldom used in the mails because an extra charge was made for any paper, no matter how small, when enclosed in another. A few paper wrappers seem to have been used in France for one purpose or another as early as the seventeenth century. Paper envelopes were made in England as early as 1830 by a bookseller and stationer in Brighton named S. K. Brewer. Edwin Hill, brother of Sir Rowland Hill who introduced the penny post, invented an envelope-

making machine soon after adhesive postage stamps came into use. A machine for folding envelopes was patented in 1845 by De la Rue. The first envelopes made in the United States are believed to have been manufactured in 1839 by a man named Pierson, who had a small shop on Fulton Street in New York City. Up to that time letter postage was collected in money directly from the sender or the recipient when delivery was made. The letter was addressed and stamped with a wax seal after it had been carefully folded in such a way that none of the message proper appeared on the exterior. The first envelope-making machine in the United States was patented in 1849 by J. K. Park and C. B. Watson, of New York, and the first commercially successful envelope-folding machine was patented in 1853 by Dr. Russell L. Harris, of Worcester, Massachusetts. Thomas Callahan patented "window envelopes" in 1902. *Envelope* in the sense of a wrapper or case for letters and other articles is derived from French *enveloppe* and many people pronounce it *ONN-ve-lope* in an attempt to approximate the French pronunciation. There is no good reason for giving a foreign sound to a word that has been Anglicized in spelling for more than two centuries and that is no longer regarded as foreign by anybody. Reputable dictionaries generally recognize two spellings and three pronunciations of this word as correct when used as a noun. It is spelled *envelope* or *envelop* and pronounced *EN-vel-opp*, *en-VELL-opp* or *en-VELL-ope*. As a verb, though spelled two ways, this word has only one accepted pronunciation—*en-VELL-opp*.

Where do houseflies go in winter?

Scientists do not know for sure whether any adult houseflies live through the winter in northern latitudes. It is popularly supposed that some houseflies survive the winter by hibernating in crevices and refuse heaps and that these individuals breed in the spring and are responsible for the fly population of the summer. Many people think the unusually large flies seen in the spring are "old females" that have survived the winter and that are charged with the responsibility of reproducing the species. The fact is that no fly or other species of insect grows after it leaves the maggot stage. A large fly is not necessarily older than a small one. The London health authorities, after three years of investigation, failed to find a single housefly that had lived through the winter. No fly, says the United States Department of Agriculture, has been known to live from fall to spring. Experiments show that temperatures below freezing, if continued very long, are invariably fatal to adult flies. The life of the housefly,

naturally brief even during the warm season, is generally only two or three weeks in length, although a few specimens have been known to live for about ninety days under favorable conditions. There is evidence that flies survive the winter in the larva and pupa state, which accounts for part of the flies seen in the late winter and early spring. The Department of Agriculture has come to the *tentative* conclusion that most of the early flies are the offspring, not the survivors, of adults that escaped Jack Frost in the fall. Flies emerge from manure heaps as late as December and some of these seek shelter in kitchens, stables and other warm places, where, if there is a good medium, they may continue to breed, with the result that adult flies emerge from time to time throughout the winter, although no individual fly may live from fall to spring. This theory is confirmed by the fact that generally there are only a few flies in the early spring. Many of the flies appearing in northern latitudes early in the spring may be introduced from more southern latitudes by normal dissemination or by transportation in vehicles and trains. Ordinarily a housefly will travel only about a mile from its breeding place, although it may travel much farther if aided by a strong breeze. Flies multiply very rapidly. One female could, if all eggs hatched, produce 131,000,000,000,000,000,000 descendants within six months. Benjamin Franklin made some interesting observations on this subject. One day at dinner, while he was representing the American Colonies in London, a bottle of wine that had been prepared in Virginia a long time before was opened. In the first glass poured there were three drowned flies. Franklin had heard that drowned flies could be revived by placing them in sunlight, and accordingly he exposed these to the sun in the sieve with which he strained them from the wine. "In less than three hours," wrote the philosopher, "two of them began by degrees to recover life. They commenced by some convulsive motions of the thighs, and at length they raised themselves upon their legs, wiped their eyes with their fore feet, beat and brushed their wings with their hind feet, and soon after began to fly, finding themselves in Old England without knowing how they came thither." Franklin added that the third fly continued lifeless till sunset when he lost all hope of its recovery and threw it away. "I wish it were possible from this instance," continued Franklin, "to invent a method of embalming drowned persons in such a manner that they may be recalled to life at any period however distant; for having a very ardent desire to see and observe the state of America a hundred years hence, I should prefer to any ordinary death the being immersed in a cask of Madeira wine, with a few friends, till

that time, to be then recalled to life by the solar warmth of my dear country!" This account, of course, cannot be accepted as scientific evidence. There is no assurance that Franklin was absolutely certain that the three flies were ever inside the bottle of wine; they may have been in the goblet before the wine was poured into it. The moral suggests that Franklin may have invented at least part of the story. The housefly (*Musca domestica*) is found in so many parts of the world that it is not known whether the flies now in the United States are descended from flies that were indigenous or from flies brought over by the early colonists. They are believed to be of Old World origin.

In what war did cavalry capture a fleet?

There are several cases in history in which naval engagements have won by cavalry. The most notable case of cavalry capturing a fleet occurred in the Netherlands during the French revolutionary war. In 1794 General Charles Pichegru took command of the French army of the north operating against the British and Austrians. He invaded the Low Countries in the winter when traveling was easy because of the thick ice that had formed over the rivers and bays. The French entered Amsterdam January 20, 1795. At the time the Dutch fleet was frozen in the ice near Helder, opposite the island of Texel. Pichegru's hussars—a cavalry unit—rode out on the ice and captured the entire fleet. The Dutch government collapsed and Holland was compelled to become an ally of France. During Simon Bolivar's campaign in Venezuela in 1818 a troop of cavalry captured a squadron of Spanish gunboats in the Apure River. General José Páez, one of the liberator's lieutenants and later president of Venezuela, and fifty of his men swam their horses into the stream, took the Spanish completely by surprise and captured the entire flotilla without the loss of one of their own men, while General Bolivar observed the engagement from the river bank. In connection with General Allenby's campaign in Palestine and Syria during the First World War a troop of Arab horsemen under a chieftain named Abu Irgeig completely destroyed the Dead Sea fleet of the Turks. This fleet, consisting of several armed launches and motorboats, was moored at a base near the site of ancient Sodom and Gomorrah. Irgeig and his Bedouin horsemen dashed up under cover of darkness, dismounted at the water's edge, climbed on board the vessels like pirates, overpowered the sentries and crews, scuttled the vessels, remounted their horses and rode into the desert before the astonished Turks at the base realized what had been going on. In

June, 1862, General J. E. B. Stuart of the Confederate cavalry made a raid to cut General McClellan's shipping on the Pamunkey River in Virginia. At the landing near the "White House" lay the *Marblehead*, a Federal gunboat. A unit of Stuart's cavalry under Pelham chased the gunboat for several miles down the river but failed to capture it. At least twice during the American resistance to Great Britain quickly organized bands of citizens captured war vessels. In June, 1772, the *Gaspee*, an eight-gun British war vessel engaged in enforcing the laws against smuggling in Rhode Island, ran aground near Providence. A body of irate citizens attacked the *Gaspee*, overpowered the crew and burned the ship. Another naval battle fought on dry land occurred in 1775, the first year of the American Revolution. A bunch of Maine farmers, armed with nothing but pitchforks and rocks, captured the British gunboat *Margaretta* after it had stranded at low tide.

Do fish bite better when the wind is from the south?

A proverb says, "A wind from the south blows the hook in the fish's mouth," and many people believe that fish will bite better when the wind is in certain directions. An anonymous rhyme contains the prevailing popular notions on the subject:

When the wind is in the East,
Then the fishes bite the least;
When the wind is in the West,
Then the fishes bite the best;
When the wind is in the North,
Then the fishes do come forth;
When the wind is in the South,
It blows the bait in the fish's mouth.

The biting of fish is a complex subject and thus far no reliable rule that is generally applicable for different localities has been worked out on a scientific basis. It is well known that fish bite more rapidly under certain weather conditions; but no satisfactory correlation of the conditions inducing such activity has ever been made. The feeding habits of fish are influenced by many factors, such as the temperature and clearness of the water, the presence or absence of currents and other disturbances, the imminence of the spawning season, the supply of natural food available and the barometric pressure. Winds influence the biting habits of fish by producing turbidness and thus affecting the visibility of the bait and by carrying large numbers of insects on which fish feed into the water, making food more plentiful. Careful observers may be able to formulate a rough rule for a particular

locality where a wind from a certain direction might be expected to produce certain water conditions. There appears to be some evidence that fish generally bite better when the atmospheric pressure is high than they do when it is low. To what extent if any the phases of the moon govern the biting habits of fish has never been determined.

How did *tin* originate?

Tin as the name of a metallic element is of unknown origin. The root is found only in Teutonic languages. Tin was one of the earliest metals discovered and is mentioned several times in the Old Testament. It was known to the Greeks, Romans, Egyptians, Hebrews and other ancients. In Biblical times the Phoenicians, "the Semites of the sea," scoured the shores of the Mediterranean and probably even passed the Gates of Hercules in quest of tin with which to harden copper and produce bronze. Herodotus wrote that the Greeks obtained their tin "from the ends of the earth," but he was unable to give any information about the *Cassiterides*, "Tin Islands," which were supposed to lie north of Europe. Some authorities believe the Tin Islands of the Greeks were the British Isles. There is evidence that the tin mines of Cornwall in the southwest corner of England were worked during the Bronze Age long before the Roman conquest under Julius Caesar. It has been suggested that *Britain*, one of the earliest names of England, may have been derived from the Phoenician word for tin. Although tin without an alloy has not proved satisfactory for coins, it is interesting that tin coins circulated in southwestern Britain from ancient times until the Middle Ages.

When is a person's first birthday?

Birthday has two distinct meanings. As originally used in English the term meant the day a person is born, that is, the day of his birth, in which sense he has only one birthday—it is his first and last. But at an early date in English literature *birthday* had come to mean the anniversary of a person's birth. In 1382 John Wycliffe used it in his translation of Mark 6:21: "Eroude in his birthe-day made a soper to the princess." Shakespeare, in *Julius Caesar*, has Cassius say to Messala on the plains of Philippi: "This is my birth-day; as this very day was Cassius born." In this sense a person's first birthday is the day he is a year old—he has a birthday each year after that as long as he lives. Thus when a person reaches his eightieth birthday he is eighty years old. Many people confuse these two meanings of birthday and regard the first anniversary of a person's birth as his second birthday. The

custom of observing birthdays dates back thousands of years. Genesis 40:20 says "it came to pass the third day, which was Pharaoh's birthday, that he made a feast unto all his servants." The birthdays of the British sovereigns from George III to Edward VIII generally fell in the spring or summer and were publicly observed by the British people on the actual dates. George VI was born December 14 and soon after his ascension to the throne he requested that his birthday be celebrated officially in June because the weather in that month is likely to be favorable for the traditional "trooping of the colors" and other outdoor ceremonies associated with the occasion. No act of Parliament dealing with the matter was passed, but the *London Gazette* began to announce the date of the official birthday of the king each year. King George continued to observe his actual birthday privately on December 14. In Canada June 9, or the following day if June 9 falls on Sunday, is usually fixed by proclamation for the celebration of the official birthday of the reigning sovereign, but in 1939 the king's birthday was celebrated May 20 in Canada because he was at that time on a visit to the Dominion. It is an interesting fact that Harold, last of the Saxon kings, and William the Conqueror were both born October 14, the date on which they fought the Battle of Hastings in 1066. The Chinese regard a child as one year old at birth, and as two years old on the first anniversary of its birth, the period of gestation being reckoned as one year. The Japanese attach little importance to actual birthdays. Like the Chinese, they regard a child as one year old when it is born. But in Japan ages are computed from the first day of the year rather than from the day of birth and all persons born within any given year are regarded as of the same age. Thus a person born on the first day of the year would be no older than one born on the last day. Some of the Samoans and other South Pacific natives consider that a youth has "come of age" when he has attained a certain stature, regardless of his years.

What causes scale in teakettles?

The hard, limelike coating that frequently forms inside teakettles results from changes in the solubility and chemical composition of the minerals in the water when it is heated. When hard water is boiled in a kettle the calcium, magnesium, silicon, iron and aluminum compounds in it tend to precipitate and accumulate until they finally form a thick incrustation. Soft water does not produce such scales, and their formation can be prevented by softening hard water through chemical treatment. Teakettle scales vary in composition, but the majority of

them probably contain calcium carbonate, calcium sulphate or silicates as their chief constituents. Except in the hands of an expert there is no known substance that will effectively remove this scale or sediment without appreciable injury to the metal of the kettle. If repeatedly used any chemical method will in time affect the vessel unfavorably and therefore mechanical methods of removing the scale are preferred. The United States Bureau of Standards suggests a 10 to 20 percent solution of acetic acid, or very dilute hydrochloric acid (say, 5 percent) used at room temperature. In using such acids for scale removal the teakettle should be emptied and thoroughly washed with plain water as soon as the scale is dissolved or loosened to prevent the metal from being attacked. Sometimes scale can be successfully removed by boiling soft water in the kettle. This method, however, is slow and requires the use of several fresh portions of soft water. A solution of ordinary washing soda will also sometimes loosen scale. If the vessel is made of aluminum it is safer to use silicate of soda or "water glass" with the solution of washing soda.

Why do lost persons travel in circles?

It has been noted since ancient times that a lost person almost invariably travels in a circle or spiral. According to the traditional explanation, the legs of an individual vary in length or strength and he takes a slightly longer step with the stronger or longer one. One leg is longer and stronger in the average human being, but there appears to be no connection between this fact and the direction a person takes when lost. In 1928 Asa A. Schaeffer, zoology professor at the University of Kansas, after observing the motions of a single-celled amoeba in water, set out to determine why men and animals travel in spiral paths when their senses fail them. He concluded that spiral movement is a universal property of living matter in motion. The scientist made hundreds of tests with persons blindfolded. Anybody who has tried to pin the tail on the donkey at parties knows how hard it is for a blindfolded person to find his way. Blindfolded individuals who attempt to walk straight ahead in an open field invariably make a path forming a clock-spring spiral. Some will circle to the right, others to the left, and occasionally one will change from right to left or vice versa, but usually the blindfolded person continues in the direction first taken. Swimmers and automobile drivers travel in similar spirals when blindfolded. There appears to be a direct relationship between the small spirals made by blindfolded persons and the large ones made by lost persons. In both cases the eyes become useless as orienting organs, and

the individual is guided in spirals by some steering mechanism, a sort of sixth sense, which takes control when the senses fail. The blind mouse, the single-celled amoeba, the lost traveler, the blindfolded swimmer all seem to be guided by the same spiraling instinct. A wild animal when hard pressed by pursuers runs in circles, probably because fear paralyzes the orienting power of its senses. Even aviators when lost in a fog without direction-finding instruments have a tendency to fly in circles.

Is it possible to sleep while floating?

It is possible for a person to sleep while floating, particularly in salt water, although the performance is accompanied by considerable risk. Warm water has a tendency to make one drowsy and not infrequently swimmers endanger their lives by falling asleep in the water. While Benjamin Franklin was on his way from France to America in 1785, when he was seventy-nine years old, he stopped a few days at an inn in Southampton, England. In his diary kept at the time he says: "I went at noon to bathe in Martin's salt-water hot-bath, and, floating on my back, fell asleep, and slept near an hour by my watch, without sinking or turning over! I never did before, and should hardly have thought possible. Water is the easiest bed that can be." Franklin in his youth prided himself on being a good swimmer, and in his *Autobiography* he tells us that during his first stay in England he once performed "many feats of activity, both upon and under the water" of the Thames between Chelsea and Blackfriar's. He taught two lads to be good swimmers "at twice going into the water," and at one time he seriously considered opening a swimming school as a means of livelihood.

Where and by whom was coffee first used?

The coffee tree is indigenous to Africa and still grows wild in Ethiopia and Liberia. Apparently it was noticed in the Ethiopian province of Kaffa about the eighth century by Arab travelers who took seeds to Yemen in southern Arabia, where the tree was first cultivated and whence the use of coffee as a beverage gradually spread. Until the seventeenth century Yemen virtually supplied the world with coffee and the Red Sea port of Mocha and coffee became synonymous. *Coffee* is derived through Turkish *gahreh* from Arabic *k'hawah*, "a decoction of berries," which may be from *Kaffa* (Caffa), the name of the Ethiopian province. Coffee beans, really berries, were first used, not for a drink, but as a food eaten in paste form like chocolate bars. Legend says an Ethiopian priest accidentally discovered the stimulating effect

of coffee when a flock of goats ate some of the berries and then neglected their proper sleep! The use of coffee as a beverage was a common among the Arabs before the Turks captured Constantinople in 1453. Moslem pilgrims to Mecca used coffee to keep themselves awake and some Moslem sects still use the beverage in connection with religious rites. The Moslems, denied the use of intoxicants by their religion, took a fancy to coffee. In 1511 the authorities at Mecca placed a ban on the use of coffee, but in Egypt Sultan Selim resisted the prohibition and had two Persians executed for warning the people against drinking it. The Turks also at first regarded coffee as an intoxicating beverage forbidden by Moslem law and tried unsuccessfully to prohibit its use, but by the end of the sixteenth century coffee-houses were common in Constantinople. Europeans learned the coffee habit from either the Arabs or the Turks or perhaps separately from both. A manuscript in the National Library of France suggests a knowledge of the use of coffee in Europe as early as the ninth century. Legend says the use of coffee in central Europe began after several bags of the beans were picked up on the battlefield after the Turks were defeated before Vienna in 1529. It is said that Christians frowned on coffee as an "infidel drink" until Clement VIII, pope from 1592 to 1605, tasted a cup and observed that it was "so delicious that it would be a pity to let the infidels have exclusive use of it." Under date of April 13, 1830, John Quincy Adams wrote in his diary: "A century and a half ago, Madam de Sevigne predicted that the taste for Racine and for coffee would soon pass away; and surely she did not imagine that her own fondling letters to her daughter would be read after a hundred and fifty years, to prove how weak her own judgment was in the matters of taste." The first coffee used in England came from Smyrna in Asia Minor. In *The Anatomy of Melancholy* (1632) Robert Burton wrote: "The Turks have a drink called coffa, so named of a berry as black as soot and as bitter . . . which they sup as warm as they can suffer." The first coffeehouse in London was opened in 1652. Within a few years such places numbered 3,000. Charles II tried to suppress the coffeehouses on the ground they were centers of political agitation and intrigue. At that time coffee was sold as a medicine by apothecaries and advertised as a cure for all sorts of human ailments. By 1668 coffee had begun to supplant beer in New York. Java began to produce coffee and the name of the island, like Mocha, became virtually synonymous with the product. About 1736 Johann Sebastian Bach at Leipzig composed a comic cantata in praise of coffee. Voltaire drank seventy cups a day and Catherine the

Great drank at breakfast five cups made of a pound of coffee. Coffee cultivation was introduced into the New World early in the eighteenth century. George Washington, a habitual tea drinker, mentions coffee only once in his voluminous diary. Under date of September 15, 1786, he wrote at Mount Vernon: "Sent my Boat to Alexandria for Molasses and Coffee which had been sent to me from Surinam [Guiana in South America] by a Mr. Branden of that place." On July 26 of the same year he referred to the "Coffee Ho. in Alexandria." He also mentioned "the Coffee Room" at Savannah and "the Coffee House" at Annapolis. In Daniel Boone's day the settlers on the frontier brewed a drink "not unlike coffee" from the seeds of the "Kentucky coffee tree." Importation of coffee from Brazil to the United States began after 1824, when William H. De Courcy Wright became United States consul at Rio de Janiero. Now coffee is produced in fourteen Latin American countries and is the chief export of eight of them. Coffee has never been grown extensively in the United States. Hawaiian coffee is called *Kona* from the Kona district on the big island where much of it is grown. There are several species and many varieties of the coffee tree, which is an evergreen shrub about fifteen feet high and which bears blossoms with a fragrance similar to but sweeter than that of the white honeysuckle. The leaves contain more caffeine than the berries but lack the pleasant aroma, and "tea" made from coffee leaves, though drunk in Sumatra and some other regions, has never captured the fancy of the world. An ordinary cup of coffee contains a fourth less caffeine than does an ordinary cup of tea. Although caffeine was named after coffee (French *café*), it was first discovered in tea in 1820.

Why did so many Chinese go into the laundry business?

Apparently Chinese immigrants in the United States and other Western countries originally went into the laundry business because that trade required practically no capital and very little if any formal education and they had an aptitude for that kind of work. The violent clashes on the Pacific coast in the last half of the nineteenth century taught the Chinese lessons that they did not soon forget, and temperamental and language barriers led them, particularly the Cantonese, to restrict themselves largely to trades in which they could be their own masters and in which there would be few contacts with Westerners that might result in misunderstandings and ultimate deportation. Some writers say that during the California gold rush of 1849 and the years immediately following, some of the gold miners, unable to hire persons to do menial work of any kind, sent their clothes all the way to Hawaii

and even to China to be washed, and to this they attribute the predilection of the Chinese for the laundry business. It seems improbable that this practice was very common and that it contributed materially toward influencing the Chinese to enter this particular trade. But washerwomen were scarce on the coast in those days and they charged as high as \$20 a dozen to wash clothes. Many Chinese, barred from other occupations, found the laundry business an easy and profitable one to get into. Family and provincial ties are strong among them and those who arrived later naturally fell into the occupations of their kinsmen, friends and countrymen already established in America. At one time so many Chinese in the United States were engaged in this occupation that some people presumed that this had been their business in their native country and that the Chinese there all made a living by taking in one another's washing!

Do foxes climb trees?

The feet and claws of foxes, which are members of the dog family, are not adapted to tree climbing and these animals are not true tree climbers. Most species do climb trees occasionally, but they are not expert at it, and they descend from trees in a rather unnatural and awkward manner. All ordinary foxes will walk or run up inclined tree trunks and even climb into the lower limbs; but they cannot jump from bough to bough like many arboreal animals and they are not entirely at home among the branches. The American red fox does little tree climbing except to walk up slanting trunks or large limbs near the ground. Very rarely does this species seek safety in trees even when pursued by dogs or other enemies, and it probably never climbs trees in quest of food or for the joy of the adventure. The American gray fox, which is the common fox of the South and which ranges northward far into the territory of the red fox, is called the "tree fox" because it is much more agile than its red cousin and often "takes to a tree" to escape capture. Some authorities say this species even sometimes climbs trees in quest of grapes, persimmons, nuts, young squirrels, birds' eggs and young, and other food. It usually climbs a tree by leaping to a low limb and then working its way up from branch to branch. Occasionally it climbs a straight tree by clasping the trunk and ascending in bear fashion. But even this species does not climb trees expertly and generally restricts its climbing to small trees and to heights of only twenty or thirty feet. Hunters report that many gray foxes, even when run down by dogs, make no attempt to save themselves by climbing trees. Both the gray and the red fox will at times, when hotly pursued,

spring into a low fork of a tree to elude the dogs and walk out on a limb to a height of fifteen or twenty feet. The British fox also does this. In his diary George Washington continually refers to having "treed a fox," which means that the fox either climbed a tree or took refuge in a hollow tree. On fox farms, the cubs in corrals frequently climb high up in the branches of small trees and seem to enjoy the experience.

Who was Jack Ketch?

In England a public executioner or hangman is often called a Jack Ketch. This alludes to John (Jack) Ketch, who became public executioner of England about 1663 and served, except for a short interval, until just before his death in 1686. Owing partly to his peculiarly appropriate surname (*ketch* being an old form of *catch*) and partly to his reputed barbarity, Jack Ketch's name became identified with the office he held. Apparently he deserves his reputation for inhumane treatment of his victims. His execution of William Lord Russell in 1683, according to the diarist John Evelyn, was done in "butcher fashion." The Duke of Monmouth, the bastard son of Charles II who was condemned to death for attempting to seize the throne from James II, on the scaffold reminded Ketch of his cruelty to Lord Russell. This rebuke unnerved the notorious executioner and caused him to bungle his job. After three ineffectual blows he threw down the axe, saying, "I can't do it." Threatened by the sheriffs, Ketch returned to the bloody task, striking two more blows with the axe and finally resorting to the knife to sever the head from the body. In *Discourses Concerning the Origin and Progress of Satire*, (1693) John Dryden wrote: "A man may be capable, as Jack Ketch's wife said of his servant, of a plain piece of work, a bare hanging; but to make a malefactor die sweetly was only belonging to her husband."

What was the Appian Way?

The Appian Way, *Via Appia* as the Romans called it, was one of the most famous highways ever built. Starting from the southern or Appian gate of Rome, it ran southeast by way of Terracina, Capua, Beneventum, Venusia and Tarentum to Brundisium, a seaport on the heel of the Italian boot. It received its name from the fact that the first stretch of about 130 miles from the capital to Capua was begun in 312 B.C. in the first year of the censorship of Appius Claudius Caecus (meaning Appius Claudius the Blind), who, in naming the project after himself, took a liberty never before taken by a high officer of the

republic, but who gained perpetual fame by doing so. The first sixty-five miles passed through the Pontine Marshes to Terracina on the coast and was as straight as an arrow. It was not completed all the way to Brundisium until about 244 B.C. Contrary to a popular notion, the roadbed was not at first paved, but merely graveled. The pavement was laid much later and consisted of large blocks of lava and stone, carefully hewn and fitted together and placed on a firm substructure of stones and cement. The width varied from fourteen to twenty feet. Under the emperors this highway was regarded as of such great importance that it was administered by a curator with praetorian rank. Publius Statius, first-century Latin poet, called it "the queen of long-distance roads." So well did the Roman workmen build that the original pavement lasted centuries, and recent excavations reveal some of it still well preserved. Notwithstanding statements to the contrary, very little of the original pavement is now in use, although modern pavement has been laid over much of the old bed. Some of the roadbed was restored in the eighteenth century by Pope Pius VI. It was over the Appian Way that Paul the Apostle passed on his way to appeal to Caesar, and the great highway is often mentioned in early Christian writings as the scene of martyrdom. Under Roman law burials were forbidden within the city walls. Accordingly, just outside the Eternal City the Appian Way and other famous roads passed near the remains of numerous imposing monuments and other structures of antiquity. The ashes of wealthy and noble pagans were placed in magnificent mausoleums, while the bodies of Christians were interred in rock graves. The Romans taught the world how to make good roads and "All roads lead to Rome" (common in English already in the fourteenth century) became a proverb. They built four other great highways from the capital. Of these the Flaminian Way, which ran to Ariminum (Rimini) 209 miles away, was the most important. In all these great military highways the foundation depended on the terrain and varied with the character of the subsoil. Roman road-building practices were not improved upon until the nineteenth century. The Roman highway system, in the palmiest days of the empire, comprised 50,000 miles of roads. All the main roads converged at "the golden pillar" erected under the temple of Saturn in the Forum about 20 B.C. by Augustus. On this golden milepost were marked the distances to the principal towns. Suetonius says of Augustus: "Further, to make the approach to the city easier from every direction, he personally undertook to rebuild the Flaminian Road all the way to Ariminum, and assigned the rest of the highways to others who had been honored with

triumphs, asking them to use their prize-money in paving them." Of Caius Graccus, who died about 121 B.C., Plutarch wrote:

His most especial exertions were given to constructing the roads, which he was careful to make beautiful and pleasant, as well as convenient. They were drawn by his direction through the fields, exactly in a straight line, partly paved with hewn stone, and partly laid with solid masses of gravel. When he met with any valleys or deep watercourses crossing the line, he either caused them to be filled up with rubbish, or bridges to be built over them, so well levelled that all being of an equal height on both sides, the work presented one uniform and beautiful prospect. Besides this, he caused the roads to be all divided into miles (each mile containing a little less than eight furlongs), and erected pillars of stone to signify the distance from one place to another. He likewise placed other stones at small distances from one another, on both sides of the way, by the help of which travelers might get easily on horseback without wanting a groom.

What is the oath of Hippocrates?

Hippocrates, "the father of medicine," was a Greek physician who was born on the island of Cos about 460 B.C. He framed an "oath" that became the basis of medical ethics. Apparently it was originally devised as a sort of indenture between the physician and his pupils. Many medical schools require their students to take the "Hippocratic oath" in a modern form upon graduation. The complete oath, as translated from the Greek by an English scholar and surgeon named Francis Adams, follows:

I swear by Apollo the physician, and Aesculapius, and Health, and All-heal, and all the gods and goddesses, that; according to my ability and judgment, I will keep this oath and its stipulation—to reckon him who taught me this Art equally to me as my parents, to share my substance with him, and relieve his necessities if required; to look upon his off-spring in the same footing as my own brothers, and to teach them this Art, if they shall wish to learn it, without fee or stipulation; and that by precept, lecture, and every other mode of instruction, I will impart a knowledge of the Art to my own sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but to none others. I will follow that system of regimen, which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischeivous. I will give no deadly medicines to any one if asked, nor suggest any such counsel; and in like manner I will not give to a woman a pessary to produce abortion. With purity and with holiness I will pass my life and practice my Art. I will not cut persons laboring under stone, but will leave this to be done by men who are practitioners of this work. Into whatever houses

I enter, I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption; and further, from the seduction of females or males, of freemen and slaves. Whatever, in connection with my professional practice or not, I see or hear, in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret. While I continue to keep this oath unviolated, may it be granted to me to enjoy life and the practice of the Art, respected by all men, in all times. But should I trespass and violate this oath, may the reverse be my lot.

What makes singing sand sing?

Singing sand is the name given to certain sand and gravel beds that emit peculiar sounds when shaken, stirred, walked upon, driven over or played upon by the wind. Geologists differ as to the cause of musical sands. Strictly speaking, the sound is not musical. It is better described as something between a crunch and a squeak, similar in some respects to the sound produced by snow when trodden upon or driven over in cold weather. But it has, as a rule, a fairly definite pitch and a tone relatively pure, and therefore, while it is not a musical note, it is more than a mere noise. Such sand was known to the ancients and is mentioned in the works of many early writers. Marco Polo wrote of the singing sands in central Asia: "Marvellous indeed and almost passing belief are the stories related of these spirits of the desert, which are said at all times to fill the air with the sounds of all kinds of musical instruments, and also of drums and the clash of arms; obliging the travellers to close their line of march and to proceed in more compact order." A hundred or more localities, some thirty of which are in North America, where the phenomenon has been noted, are described or listed in geological literature. Singing sand is found chiefly on beaches, where it is usually confined to the dry and relatively firm sand above the ordinary water level but moistened by the waves during storms or high tides. The singing sands along the beach near Manchester, Massachusetts, lie between the limits of high and low tide and extend a fifth of a mile. Beach sand that is continuously moist, as well as the loose dry sand heaped by the wind beyond the reach of the waves, generally does not "sing." But the phenomenon seems to have no relation to the composition of the water, for singing sands occur on shores of the ocean, inland salt seas and fresh lakes. Occasionally musical sand is found in dunes and in deserts far from any body of water, where all the sand is perpetually dry and constantly moved about by the wind. The singing sands north of Alamosa, Colorado, are in the largest body of shifting sand in the world. Other notable musical sands are the

"crying sands" of the Kalahari Desert in South Africa, the "barking sands" of Kauai in the Hawaiian Islands, the "drumming sands" of Reg Ruwan in Afghanistan and the "fluting sands" of Jebel Nagus on the Sinai peninsula. In *The Voyage of the Beagle* Charles Darwin wrote that while in Chile he heard of a "hill in the neighborhood which they called *El Bramador*,—the roarer or bellowers." The naturalist understood "the hill was covered by sand, and the noise was produced only when people, by ascending it, put the sand in motion." The "music" produced by the singing sand on Sinai, described as neither metallic nor vibratory, has its greatest intensity on windy, hot, summer days. Singing sand may occur in comparatively small patches in the midst of ordinary sand. It generally does not "sing" at all seasons and does not always emit the same sounds. One theory is that the sound is produced by friction between the angular particles, but there is no evidence that the shape of the grains is responsible for the phenomenon. Some musical sand consists largely of sharp, angular grains, with few smoothly rounded particles, while some consists almost wholly of even, smoothly rounded and well polished grains. Some specimens retain their "musical" property after being kept in cans, bottles or sacks for years, whereas others completely lose it. One investigator found that nearly all samples, when shaken or rubbed together for a considerable time, gradually lost their musical property until it finally disappeared completely. Another investigator suggested that the grains of silica may pick up sound waves, transmit them to one another and magnify their volume on the principle of the crystals in early radio sets.

What is meant by the tonnage of a ship?

Tonnage as applied to ships is confusing because it may refer to either capacity or weight and because several complicated formulas are used to determine the tonnage of different types of ships and of the same ship for various purposes. The subject is further complicated by the fact that the weight unit called a ton may be the short ton of 2,000 pounds or the long ton of 2,240 pounds. *Ton* is derived from *tun*, the name of a large cask in which wine, ale and other liquids were formerly transported. A tun contained 42 cubic feet of space, held 252 gallons of wine and weighed about 2,240 pounds. In Henry V's reign (1413-1422), when taxes were levied on ships, a tun was taken as the unit of measurement to determine how much a ship could carry. The tax was fixed at one tun for each ten tuns of cargo capacity. Thus *tunnage* (later spelled *tonnage*) came to mean the number of

tuns or casks of wine a merchant ship could carry. Later tonnage was estimated by measurements that gave the cargo space in a vessel. As now applied to the merchant ships of Great Britain, the United States and most other maritime nations, tonnage may refer to any one of several measurements of capacity and weight used as a basis for taxes, port and harbor charges, pilot fees and canal tolls, and to provide a system of classifying, registering and identifying ships. Gross tonnage (also called space or statutory tonnage) has no connection with the weight of the ship as a whole or with the weight of the cargo she can carry. It is the total capacity of the entire hull and the closed-in spaces on the deck available for cargo, stores, crew and passengers expressed in terms of one "ton" for every 100 cubic feet of space. This "ton" is a purely arbitrary unit of space. Just what material would occupy 100 cubic feet in a ship's hold is not known. A ton of soft coal occupies about 42 cubic feet. The 100-cubic-feet-per-ton formula is used in measuring gross tonnage regardless of the type of cargo. Even in computing gross tonnage, the usual figure used for vessels sunk or captured in war, certain spaces in a ship may be arbitrarily excluded. Net tonnage (also called register tonnage) is the actual cargo-carrying capacity of a ship in terms of 100 cubic feet. It is the gross tonnage less the space occupied by machinery, fuel, water tanks, master's cabin, crew's quarters, navigation space and other things representing no earning power. Gross tonnage less the spaces above the second deck from the keel is known as underdeck tonnage. Net tonnage varies in different ships, but is generally about two-thirds of the gross tonnage. Since net tonnage is the basis of registration dues, port and harbor charges, pilot fees and canal tolls, it is limited by navigation laws to certain percentages of gross tonnage. Dead-weight tonnage, the term generally used in construction statistics, is the weight in long tons of any kind of cargo required to depress the ship from the light water line, when only machinery and equipment are on board, to the load line or the safe limit of loading. It represents the weight of the cargo, fuel, stores, water, crew, passengers and whatever else the vessel is designed to carry with safety. Dead-weight tonnage is measured by the difference in displacement of the ship when light and when loaded. Displacement tonnage, used in designating the size of warships, is the total weight of the vessel in tons of 2,240 pounds and everything on board measured by the weight of the sea water displaced. This is based on the principle, discovered by Archimedes, that a floating body displaces a volume of water or other liquid equal to its own weight. A battleship with a tonnage of 35,000 displaces 35,000 long

tons of sea water. A merchant ship with a displacement tonnage of 12,000 might have a dead-weight tonnage of 8,000, a gross tonnage of 6,000 and a net (register) tonnage of 4,000.

How are rainbows produced?

The rainbow has attracted the attention of and fascinated man since ancient times. In Genesis we are told that God set the rainbow in the cloud as a token of the covenant he made with Noah and his descendants. In Greek mythology Iris was the goddess of the rainbow. When the gods intended to cause discord on earth they sent Iris as their messenger and formed a rainbow to be used by her as a bridge. The secret of the rainbow lies in the individual raindrops. Drops of falling water act like a glass prism in splitting light into its primary colors. A rainbow is produced by the refraction and reflection of light rays by drops of rain, mist and spray. The most perfect rainbows are seen when the sun is shining brightly behind the observer and rain is falling in large drops in front of him. Sometimes several bows are seen simultaneously—double and even triple rainbows—when the sun is shining on a sheet of rain. This is due to the fact that the drops refract and reflect light differently at different angles from the observer. The principal bow is known as the primary rainbow; it exhibits the finest display of the colors of the spectrum. To form such a rainbow each ray of light is refracted twice and reflected once—refracted on entering the drop, reflected from the interior surface, and then refracted as it emerges on its way to the observer's eye. What is known as the secondary rainbow, often seen outside the primary, is larger and fainter and differs from the other in that the order of the colors is reversed. In this case two internal reflections, instead of one, occur in each drop of water. The angular radius of the primary bow is about forty-two degrees; that is, if lines were drawn from the observer to each end of the bow the angle thus formed would be about forty-two degrees. That formed by the secondary bow would be about fifty-two degrees. The concentric bands composing a rainbow have their common center on a straight line passing through the sun and the eye of the observer, and accordingly this center is always the same angular distance below the horizon as the angular distance of the sun above it. Two persons standing near each other do not see exactly the same rainbow. The sky is full of rainbows when the necessary conditions are present, but a person focuses only one, or one series; if he takes a step forward or backward his eyes focus a slightly different bow. Many people have a notion that a rainbow is semicircular because the earth is round; but the shape of

the bow is due to the refraction and reflection of light by the individual raindrops and consequently the spherical form of the earth has nothing to do with it. The rainbow is invariably curved because each color is formed by rays that reach the observer at a given angle, and this angle remains constant for the same color. A person can never reach "the end of the rainbow" because whenever he moves, the rainbow moves also. The "feet of the rainbow," which appear to rest upon a land or water surface, are only optical illusions. Rainbows due to showers of rain are never seen as complete circles by observers at ordinary elevations. Such bows, however, do sometimes appear from points well up in the air, as from an aircraft or a mountaintop. Aviators see the phenomenon most frequently at a considerable altitude when the sun is near the horizon. The peculiarly colored circles that appear occasionally around the sun and moon are not true rainbows. An occasional circular rainbow produced by mist or spray is seen at ordinary elevations. In *The Voyage of the Beagle* Charles Darwin described such a rainbow seen during a storm at sunset off the coast of Chile. "During a few minutes there was a bright rainbow," wrote the naturalist, "and it was curious to observe the effect of the spray, which being carried along the surface of the water, changed the ordinary semicircle into a circle—a band of prismatic colors being continued, from both feet of the common arch across the bay, close to the vessel's side; thus forming a distorted, but very nearly entire ring." Ordinarily half or much more than half of a rainbow is "below the horizon." Generally the sun must be fairly low in the sky for the rainbow to be seen at all and for that reason rainbows are most often observed in the late afternoon or early morning. In the middle latitudes it is a rare thing to see a rainbow at high noon. The "seven colors of the rainbow" are supposed to be red, orange, yellow, green, blue, indigo and violet. Sir Isaac Newton found that these are the "primary colors" produced when a beam of white light is broken up by a glass prism. Theoretically the falling raindrops responsible for the rainbow ought to break up white sunlight into the full series of spectrum colors. It is doubtful, however, that anybody ever saw all seven of the colors of the rainbow. Few persons can distinguish more than four, or at most five, of them. There is always considerable overlapping and canceling out of the primary colors owing to the fact that the light does not come from a single point but from various parts of the sun's disk, the angular diameter of which is about half a degree. The average person does not regard indigo as a color distinct from blue, and orange is also commonly ignored as a separate color. Colors near the

blue end of the spectrum are often faint in rainbows and the eye misses them completely or fails to distinguish the blue, indigo and violet from one another. The number of colors and the relative widths they occupy in the bow vary with the size of the raindrops. To most observers the ordinary rainbow appears to consist of bands of red, yellow and bluish green.

Does radio affect the weather?

The notion that radio broadcasting affects the weather and produces droughts, floods and storms is common. On the assumption that radio waves "dry up the atmosphere" and prevent normal rainfall, some people have gone so far as to advocate closing down broadcasting stations to relieve drought-stricken areas. Oddly enough, others believe that the activity of radio causes abnormal rainfall and floods. That radio "ruined the climate of Mexico" is a common notion. A possible connection between radio and drought was suggested as early as 1910, when broadcasting was still in its infancy. It is not surprising that many persons, prone to imagine mysterious relationships between phenomena they do not understand, should readily accept the suggestion that radio waves promote or hinder the fall of rain, snow and hail. Since radio waves interfere with one another and since radio transmission and reception are affected by sunspot activity, the phases of the moon, electrical storms, the northern and southern lights and atmospheric conditions, it was natural to suppose that the reverse might be true. But up to the present time meteorologists and weather experts have been unanimous in the opinion that radio has no effect whatever on the weather. By no stretch of the imagination, they say, can anyone familiar with the principles of both radio and rainfall infer that the former affects the latter. So far as known, radio waves affect none of the processes involved in producing rain and they do not either increase or decrease precipitation. Even if radio waves do affect weather in some unknown way, it is not probable that the effect is appreciable. The amount of energy broadcast by radio stations is minute compared to that produced by natural electrical phenomena such as thunderstorms. Many people misunderstand the difference between radio and sound waves. Radio waves are believed to travel with the speed of light—about 186,227 miles a second. The speed of sound waves varies with the medium. In a general way the speed of sound through air is 1,000 to 1,100 feet a second, although it is affected by the moisture content and temperature of the atmosphere. Ordinary sound waves are converted into radio waves at the sending station and

these radio waves in turn are reconverted into ordinary sound waves by the receiving set. Radio transmission is not instantaneous. Radio waves require time but they travel so rapidly that we ordinarily do not think of the time required. The time required for the voice of a speaker on the radio to reach the listener is the total of the time taken for sound waves to travel from the human mouth to the microphone, the time for the radio waves to travel from the sending station to the receiving set, and the time for sound waves to travel from the receiving set to the listener.

How are the holes put in macaroni?

Macaroni, spaghetti, vermicelli and similar rod-shaped foods are all made of fine flour of various kinds and are distinguished from one another by shape and size. In Italy, where they are a national staple, they are known as *pasta*, "paste." All Italian pastes are made by virtually the same process. Water, salt, eggs, milk and spicy cheese are commonly added. After being prepared the dough is forced through metal dies containing numerous small holes. Spaghetti, vermicelli and other smaller varieties are not tubular but cord-shaped and holeless. Macaroni is the only Italian paste that is always tubular in form. In the case of macaroni each hole in the die contains a central core so arranged as to form the passing dough into a cylinder. After the dough is dried it retains the tubular form transmitted by the die. The best edible pastes are composed chiefly of semolina, a gritty flour made from durum or hard wheat, which for that reason is often called "macaroni wheat." Northern wheat, best for bread flour, will not make "genuine macaroni." *Macaroni* is derived from *maccare*, "to bruise," referring to the earliest method of reducing wheat into flour by pounding it. From the same source comes *macaroon*, the name of a small cake made of crushed paste, the whites of eggs, sugar and pounded nuts. The Italian *maccahrone* was originally applied to a rough mixture of meal, eggs and cheese. Dog Latin, a bastard language composed of a mixture of Latin and modern words, came to be called macaronic Latin. Verse in which Latin and modern words are jumbled together to create a humorous effect is known as macaronic verse. This term was coined by Odaxius of Padua and popularized about 1520 by his pupil Teofilo Folongo (Morlinus Coccaius), who published a book entitled *Liber Macaronicorum*. Just how *macaroni* came to signify a fop, dandy or conceited fool is not known for certain. About 1760 a group of English fops, who adopted all sorts of foreign foods and imitated continental manners, formed the Macaroni Club in London.

This may have suggested *macaroni* in the sense of a coxcomb. In an early version of the song we are told that Yankee Doodle "stuck a feather in his cap, and called it macaroni." A troop of Maryland soldiers in the Continental army were known as Macaronis because of their gay uniforms. *Spaghetti* signifies "little cords" in Italian. There are about 320 feet of spaghetti in a pound of standard size. In the finished product the moisture content is not more than 13 percent. *Vermicelli* is from Latin *vermiculus*, "little worm," and the product, which is smaller and more delicate than spaghetti, was so called from its wormlike appearance. A related ribbon-shaped product usually made with eggs is known as *noodle*, from German *nudel*. Little shells or cases of thin noodle dough containing a savory forcemeat are known as *ravioli*, which is the plural of Italian *raviola*.

Is cannibalism still practiced anywhere?

In one form or other cannibalism probably was once practiced by nearly all peoples in some stage of their history. It survived in parts of Africa, the interior of Australia, many places in Polynesia and perhaps a few other isolated regions until the end of the last century. Traces of it still exist in New Guinea. What vestiges of cannibalism remain are restricted almost entirely to the tropical regions within ten degrees north and south of the equator. Eating human flesh by human beings as an ordinary article of food is and probably always has been rare, and most of the early explorers exaggerated the extent to which cannibalism was practiced by savage peoples. Among most so-called cannibalistic savages the practice was a religious or sacramental rite. As a rule cannibals ate only enemies captured in war and many tribes permitted only the warriors and chiefs to partake of human flesh. The practice was based on a notion that the eater of human flesh acquired the soul and powers of the person eaten. Formerly the Maoris of New Zealand, like the Fiji Islanders and many other Pacific tribes, practiced cannibalism, but the last known case of cannibalism among them occurred in 1843. In 1923 the last man-eating native of Samoa was captured on Tutuila. He was one of three cannibals who had escaped thirty-three years earlier. Traces of cannibalism were still found a generation or two ago among several native tribes in the interior of Australia, where old people were occasionally killed and eaten by their relatives. Sporadic cannibalism may still occur in parts of Africa. In 1923 the French authorities executed six natives of Guinea for eating eleven persons. A seventy-year-old native woman told the judges she preferred the flesh of children "in the hope of be-

coming young again." Of course, cannibalism may be practiced by human beings, as well as the higher animals, in cases of starvation. *Cannibal* is from Spanish *canibal*, a corruption of the name of a South American and West Indian man-eating tribe. Natives of Guanahani told Columbus that the *Kalinas* or *Caripunas*, a people to the south-east, made a practice of eating human beings. A cacique in Hispaniola said the man-eating tribesmen were called *Caribes* and lived on the opposite side of that island. Columbus wrote in his journal that the natives of the Antilles lived in continual fear of the *Caribales* or "people of Cariba." Some authorities suppose the root word was Arawakan Indian and signified "strong men" or "brave men." *Cannibal* and *Carib*, whatever their original meaning, appear to be from the same Indian source. The English quickly adopted *cannibal* in the sense of savages who make a practice of eating human flesh. In Shakespeare's *III King Henry VI* York says of his murdered son Rutland, "That face of his the hungry cannibals would not have touch'd, would not have stain'd with blood," and Othello told Desdemona "of the cannibals that each other eat, the anthropophagi," the last word being the Greek equivalent and meaning literally "man-eaters."

Who was Billy the Kid?

William H. Bonney (1859-1881), one of the most notorious outlaws of the Southwest, was known as Billy the Kid because of his youthfulness. In his six years as a gunman and desperado he killed twenty-one men, "exclusive of Indians," and expressed a desire to kill two more before winding up his career of crime. His pleasing personality, his fearlessness in combat, his ingenuity in avoiding capture all threw a glamour around his life and made him a sort of Robin Hood in western legend. Billy the Kid was born in New York City and when a child was taken by his parents to Kansas, where his father died. After living with his mother in different parts of the West he made his first killing at the age of twelve when he killed a man alleged to have insulted his mother. At sixteen he helped another man kill three Indians to get their furs. During the next two years he took part in a series of spectacular adventures in which he killed twelve men. In 1877 he showed up in the Pecos Valley in New Mexico and took a prominent part in the "Lincoln County cattle war," becoming the chief gunman for one faction and playing the stellar role in killing the sheriff and his deputy. General Lew Wallace, the author of *Ben Hur* and governor of the territory, promised the outlaw a pardon in case of conviction if he would give himself up. Billy the Kid replied that

he would be killed immediately if he disarmed, even though protected by the government. With twelve followers he then started out on a series of cattle-stealing and killing expeditions. Finally, after being forced to surrender in 1880, he was convicted and sentenced to be hanged for killing Sheriff James A. Brady. Although shackled with handcuffs and leg irons the desperado killed two deputies guarding him at Lincoln and escaped. Several months later he was shot and killed by Sheriff Pat F. Garrett of Lincoln County in the home of Pete Maxwell at Fort Sumner in what is now De Baca County, New Mexico.

Do rattlesnakes ever climb trees?

Rattlesnakes do not habitually climb trees because they are poorly adapted for such an accomplishment, but there is unquestionable evidence that some species do so occasionally. While William T. Hornaday was director of the New York Zoological Park he wrote: "From our six species of captives, we have learned that rattlers climb bushes with almost as much ease as professional tree-climbers, but in a wild state it seems fairly certain that they rarely do so." Many species of snakes are expert tree climbers. For instance, the dreaded mambas or tree cobras of tropical Africa are strictly arboreal and they frequently bite natives on the head and shoulders as they travel along forest and jungle paths. In art and in stuffed specimens in museums arboreal snakes are often conventionally represented coiled closely around the branches and trunks of trees. Actually live snakes do not coil their bodies closely around branches. When a snake climbs a tree it extends the body in a more or less straight line and glides up. It is able to raise itself by gripping the bark or other projections with the tips of its expanded ribs and pressing against the tree with the concave rows of pointed scales. When it reaches a branch it does not coil around it but maintains its position by clinging along its upper surface. Only the tail of a snake is prehensile and capable of being coiled around a limb in corkscrew fashion. A snake will coil its tail completely around a limb on which it is resting or when it hangs down or reaches toward another limb.

How should Chinese names be written?

In Chinese surnames are always written first and that order is usually followed when they are written in English. For instance, in *Sun Yat-sen*, *Sun* is the surname, while *Yat-sen* corresponds to the Occidental first, given or Christian name, as it is variously called. Accord-

ing to the prevailing and accepted practice, when a regular Chinese name is written in English the surname is written first and capitalized, while the two parts of the given name are hyphenated with only the first part capitalized: as, Chiang Kai-shek, Li Hung-chang and Chang Tso-lin. The hyphen connecting the two names, though established by English usage, is unnecessary and meaningless from the Chinese viewpoint. If the Chinese turned the tables on us they would write John-paul Jones, William-henry Harrison and Franklin-delano Roosevelt. To the Chinese the correct English usage would be Sun Yat Sen, Chiang Kai Shek and Li Hung Chang. As a rule Chinese surnames consist of only one syllable, although several hundred of them are dissyllabic. When a Chinese has such a surname the conventional English practice is to use two hyphens in writing his full name: as, Ssu-ma Hsiang-ju. In such cases only the first part of each hyphenated compound is capitalized in English. If a Chinese has only two names both are written with upper-case initials without the hyphen—Chang Hung. In abbreviating regularly formed Chinese given names such as Sun Yat-sen, Chiang Kai-shek, Soong Tung-liu and Ssu-ma Hsiang-ju, the Anglicized order is usually followed and the surname written last: Y. S. Sun, K. S. Chiang, T. L. Soong, and H. J. Ssu-ma. Many Chinese, in addition to their regular names, have a "familiar name" by which they are known to members of their family and friends. When Wu Chao-chu was Chinese minister to the United States he Anglicized the order of his name and subscribed himself Chao-chu Wu. *Confucius*, the popular name of the ancient Chinese philosopher, is really not a Chinese name at all; it is the Latinized form of *K'ung Fu-tse*, "the Master K'ung." Likewise *Mencius*, the popular name of another Chinese sage, is the Latinized form of *Meng-tse*, "the Master Meng." His Chinese name was Meng Ko.

Who said: "Every man has his price"?

This saying is generally ascribed to Sir Robert Walpole (1676-1745), prime minister of England, but it may have been proverbial before his time. The evidence indicates that "Every man has his price" was a distortion of what Walpole actually said and was put in his mouth by his enemies to represent him as a cold-blooded politician whose only aim was to perpetuate himself in power. In his *Life of Sir Robert Walpole* Lord Morley referred to this "shallow and cynical apothegm" as "a pure piece of misrepresentation." Walpole, however, did on more than one occasion refer to the price of men, but always with qualification. In his *Memoirs of the Life and Administration of Sir Robert*

Walpole (1798) William Coxe wrote: "Flowery oratory he despised. He ascribed to the interested views of themselves or their relatives the declarations of pretended patriots, of whom he said, 'All those men have their price.'" That refers to about 1740. Walpole is represented as saying on another occasion that he knew the price of every member of the House of Commons except three. To the king he said: "As to the revolters, I know the reasons and I know the price of every one of them." These particular statements were converted by his enemies into the general statement now popularly attributed to him. In *Walpole* (1869) Edward Bulwer-Lytton has the prime minister say: "Every man has his price, I will bribe left and right." Horace Walpole, the author and wit, wrote in 1774 that, "My father is said to have said that every man has his price," but later he pronounced the alleged saying a pure invention, which it hardly was, being rather a distortion or misrepresentation. As early as 1733 Sir William Wyndham, leader of Walpole's opposition, said, "It is an old maxim that every man has his price." Of course, the general thought had been expressed long before that. In Shakespeare's *Julius Caesar*, Cassius says: "For who so firm that cannot be seduced?" There is a story that an American diplomat stationed in Havana before the Spanish-American War asked the State Department to recall him because, as he put it, "the Spanish down here are getting awfully close to my price."

Is there a tree-climbing fish?

Members of a family of spiny-finned, fresh-water fish found in ponds, lakes, ditches, canals and swamps in southeastern Asia and Africa are popularly known as climbing perch and "tree-climbing fish" because of their remarkable agility out of water. The scientific name of the genus is *Anabas*, from a Greek word meaning "to go up." Because they are equipped with breathing organs accessory to the gills, which enable them to live out of water for protracted periods, they are virtually amphibious. The best-known species is *Anabas testudineus scandens*, the last element in the scientific name signifying "climbing." This species, which is five or six inches long, leaves the water and travels overland from one body of water to another. It is able to jerk itself along awkwardly on land by means of its tail, gills, fins and spines. Its land journeys are generally made at night. Although the tree-climbing ability of this species has probably been exaggerated, it works its way up steep banks and inclined tree trunks, and there appear to be authentic cases of its having climbed five or six feet up the rough trunks of palm trees. These fish can survive dry seasons by burying

themselves in the mud and living almost indefinitely in a torpid state. The natives of parts of India, it is said, get a regular supply of fresh fish by digging up climbing perch from the beds of ponds and lakes that are temporarily dry. There are many known species of fish that "walk" and "climb" out of the water. The small Asiatic and Polynesian gobies known as mudskippers (*Periophthalmus schlosseri*) frequently leave the water and skip about over mud and sand. They do not hesitate to climb up the roots of mangroves in pursuit of prey and their reputation for "climbing trees" rivals that of the climbing perch.

Why are glasses clinked before drinking toasts?

Two theories have been advanced to explain the origin of the custom of touching glasses before drinking healths. The first and more probable traces it to the ancient practice of pouring wine from one drinking vessel into the other to guard against treachery by the person offering the drink. In those days strangers were suspicious of one another and all men were regarded as enemies in the absence of proof to the contrary. When a person was offered wine he would pour a little of the contents into the host's glass to make sure that the drink was not poisoned. The host gladly accepted the challenge to demonstrate his friendliness and he and his guest would therefore take the first sip simultaneously. Thus, though originally denoting mistrust, the exchange became an act expressive of mutual confidence. In time the original reason for the practice was forgotten and it degenerated into merely clinking the glasses and then drinking together. The second and less probable theory holds that the custom originated among the Jacobites of England after the flight of James II in 1688. For several generations the Stuart sympathizers were numerous, and military attempts to restore the exiled royal family to the British throne were made in 1690, 1715 and 1745. The Jacobites had to be secretive about their attachment to the Stuarts. Frequently on social occasions they were called upon to drink the sovereign's health. It was understood among them that "the king," "the queen," "His Majesty" and "Her Majesty" did not refer to the reigning sovereign but to the Stuart pretender "over the water," that is, across the Channel in France. To symbolize attachment to the king "over the water" they passed their wineglasses over the finger bowls before drinking the health of the sovereign. When the significance of the practice was discovered finger bowls were abolished from the banquet table. But the symbolism was so well established by that time that the Jacobites thereafter merely passed one wineglass over another or touched the bottom

of one glass to the rim of another. The present custom of clinking the glasses together before drinking a toast is a relic of this old Jacobite practice, according to this elaborate theory concocted to explain the custom. Finger bowls, it is said, were not restored to the official banquet table in England until the accession of Edward VII in 1901. Some authorities suppose drinking healths originated from the practice of exchanging drinks to show they were harmless. Others think the custom arose from the use of sacrificial wine or similar religious usages. The Hebrews made drink offerings, and the Greeks and Romans poured out libations for the gods. Somehow drinking simultaneously with ceremony came to denote wishes for good health and pledges of friendship. Centuries ago a piece of toast was put in the tankard or wine cup before drinking to improve the flavor. In Shakespeare's *The Merry Wives of Windsor* Sir John Falstaff tells Bardolph, "Go fetch me a quart of sack; put a toast in't." For some reason the person to whom a health was drunk came to be known as the toast. In the *Tatler* for June 4, 1709, Richard Steele gave what is accepted by some as the origin of the term in this sense: "It happend that on a public day a celebrated beauty of those times [reign of Charles II] was in the Cross Bath, and one of the crowd of her admirers took a glass of the water in which the fair one stood, and drank her health to the company. There was in the place a gay young fellow, half fuddled, who offered to jump in, and swore, though he liked not the liquor, he would have the toast. He was opposed in his resolution, yet this whim gave foundation to the present honour which is done to the lady we mention in our liquor, who has ever since been called a toast." Finally, the table-master, the person who presides at a banquet, leads in offering toasts and calls upon the speakers, came to be called the toastmaster.

What does *von* in German names mean?

Von in German personal names was originally a preposition literally meaning "of" or "from." The Dutch equivalent is *van*. At first *von* and *van* were used in German and Dutch names to distinguish persons by their estates or places of residence. *Frederick von Steuben* meant Frederick of Steuben, and *Martin van Buren* meant Martin of Buren. Since this style of writing names in the Germanic states was generally used only by the nobles it became the sign of noble birth or high rank. Later *von* and *van* were prefixed arbitrarily to family names as titles of individual distinction. *Vom* instead of *von* occurs in a few old Rhineland family names: as, Ernst *vom* Rath. *Von* and *van* in Ameri-

can and English family names have little significance now, unless they suggest that the bearers may be descended from families once belonging to the aristocracy or nobility. They have been styled "surnames of quality." *De* or variations of it (*da*, *di*, *d'*, *du*) plays a somewhat similar part in French, Spanish and other languages of Latin paternity: as, Guez de Balzac; Leonardo da Vinci; Gabriele d'Annunzio, and Daphne du Maurier. *Del* and *dela* literally signify 'of the.' *De* and its equivalents in the Romance languages is a preposition meaning "of," but in Dutch it is an article meaning "the." A French name containing the preposition *de* is not so likely to denote that the family bearing it is of noble lineage. In foreign usage *von*, *van* and *de* in family names of German, Dutch and French origin are treated as simple prepositions and the initial letters are not capitalized; but in English the practice is to follow the preference of the bearer. Such particles in English names are invariably capitalized when they begin a sentence. When they are not preceded by the given name they are generally treated as integral parts of the name and capitalized; but when they are preceded by the given name they are often written in small letters.

Has edible mammoth meat ever been found?

The northern woolly mammoth (*Elephas primigenius*) was a species of elephant that became extinct thousands of years ago. It was about the size of the Indian elephant and was protected from the cold by a layer of fat, a thick skin and a double coat of hair. Its long tusks curved upward and outward and sometimes described a spiral in which the points curved toward each other. Remains of this prehistoric animal have been found in Europe, Asia and North America, and the tusks have been exported from Siberia for centuries. *Mammoth* is from a Russian form of a Tartar word of uncertain origin. One theory is that it originally signified "of the earth" or "earth mouse" and that the Tartar ivory hunters so named the animal because they never saw it alive and supposed it lived underground like a giant mole and perished when the ice and snow melted and exposed it to sunlight. Like *elephantine*, *mammoth* became an adjective meaning "huge," "gigantic," "colossal." In this sense the term dates from the early part of the nineteenth century and appears to have originated in America. It may have been popularized by its application to Mammoth Cave in Kentucky. Numbers of mammoths were frozen in the alluvial deposits of the far North before the species became extinct. Some of them are in a lying and others in a standing

position. Occasionally several carcasses are found close together in a "mammoth cemetery." They are invariably found frozen in muck or alluvial deposits and never in snow and ice. Some carcasses have been found virtually whole and intact, with the hide, hair, flesh and even unchewed and undigested vegetable food in their mouths and stomachs, indicating they were killed and frozen suddenly. Notwithstanding they have been dead since the great ice age, their carcasses have been preserved in cold storage. Dr. W. H. Dall reported in 1896 that Alaskan natives greased their boats with mammoth tallow. There have been numerous reports that wolves, dogs and other animals have eaten mammoth flesh when whole carcasses were thawed out and exposed. Some of the mammoths found in Siberia are said to have been so well preserved that the flesh was fit for human consumption. King Herod Agrippa of Judaea, according to an ancient story, invited Emperor Caligula to a banquet in Rome at which one of the delicacies was the flesh of a mammoth taken from the frozen bed of a lake in the Caucasus. Around the turn of the century a group of Russian scientists had mammoth meat served at a banquet in St. Petersburg. Even Czar Nicholas II is said to have sampled the prehistoric meat. Reports on the edibility of the meat were conflicting. According to one the diners suffered no ill effects, while another said some of them became violently ill. More recently a traveler who claimed he ate mammoth meat in Siberia described it as black in color and "a cross between bear and whale" in taste. But the claim that mammoth meat fit for human consumption has been found should be accepted with a grain of salt. With due respect for the efficiency of the "arctic icebox," all such ancient flesh has probably deteriorated to some extent. Nevertheless, as Darwin said in *The Voyage of the Beagle*, "The perfect preservation of the carcasses of the Siberian elephants and rhinoceroses is certainly one of the most wonderful facts in geology."

Will mercury freeze?

Mercury, or quicksilver, is used in thermometers to measure heat because it expands and contracts uniformly and because it will not freeze at the low temperatures ordinarily encountered during the winter in most of the inhabited parts of the world. It was first substituted for alcohol in thermometers made by Gabriel Daniel Fahrenheit (1686-1736), a German physicist, who adopted the average temperature of his native Danzig during the winter of 1709 as the zero point in his graduated scale for thermometers. Mercury is the only

metallic element that stays liquid at ordinary temperatures. But mercury freezes or solidifies at about thirty-eight degrees below zero Fahrenheit, and in cold places mercury thermometers often freeze during the winter. The "ice" is a white, ductile and malleable mass that can be cut with a knife like cheese. Although a mercury thermometer is useless in temperatures below the freezing point of that metallic liquid, the thermometer does not burst, for mercury, unlike water, contracts instead of expanding when it freezes. In the arctic and antarctic, at high altitudes and in other extremely cold places the thermometers used are filled with alcohol colored with a red dye or some other liquid that will register temperatures down to eighty degrees Fahrenheit or lower without solidifying. A temperature of about 125 degrees below zero is required to freeze pure alcohol. The great weight of mercury makes it suitable for use in barometers.

How does quicksand differ from ordinary sand?

Literally *quicksand* means "live sand," *quick* here retaining a degree of the archaic sense it has in *quicksilver*, *quicklime* and *quick and dead*. The term is applied popularly to a bed of loose, wet sand into which heavy objects readily sink. It differs from ordinary sand in that the grains have been worn small, smooth and round by the action of water. Banks or beds of such sand often accumulate in streams, estuaries and flat stretches of seashore, where the water is prevented from running off by underlying layers of impervious material and where the sand is kept constantly wet and stirred up. The infiltrating water lubricates and separates the particles of sand and creates a mobile and unstable mass which behaves very much like a fluid but which is too dense to permit quick movements as in swimming. Sometimes the mobility of quicksand is increased by the presence of calcium carbonate and tiny flakes of mica. This mixture of water and sand possesses no mysterious sucking power, as is commonly believed. Its density is greater than that of water and it will support the body of a man or horse provided there is no struggle. But if the sand is sufficiently saturated with water it readily yields to the foot of a man or horse and the entire body begins to sink slowly. An effort to draw out the foot quickly creates a partial vacuum and a sucking effect. Upon finding himself sinking in quicksand, a man generally becomes frightened and makes the mistake of struggling frantically. Drawing up one foot rapidly increases the pressure on the other and this action repeated in succession causes the unfortunate victim to be engulfed by the mobile mass. If he did not

struggle he would not be completely submerged by the quicksand. Therefore a man finding himself on quicksand should try to float, as it were, by assuming a horizontal posture to distribute his weight over a large surface and by struggling as little as possible until he can roll off the sand or receive aid. He should try to remove his feet by slow, steady pulls. Since quicksand does not differ in appearance from other sand it has become notorious as a source of danger to travelers and stranded ships, and the symbol of double-dealing and treachery. In Shakespeare's *III King Henry VI* Queen Margaret refers to the Duke of Clarence as "a quicksand of deceit." The dangers of quicksand, however, have been greatly exaggerated in fiction. Very few persons have lost their lives in real quicksand, which is not common. Much so-called quicksand is merely fine mud covered with ordinary sand, a much more dangerous combination. Ships, boats, trains, carriages and similar objects are engulfed in quicksand only when the sand is so saturated with water that it virtually constitutes a liquid. During a storm in 1703 thirteen British warships ran aground on the Goodwin sands and the wrecks were completely swallowed up. In 1878 a train of the Kansas (now Union) Pacific Railroad fell into Box Elder Creek at Watkins about twenty-five miles west of Denver. The great weight of the locomotive carried it so deep into the sand that it could never be located, though continually probed for to a depth of fifty feet when there was virtually no water in the bed of the creek. A locomotive and train also sank into sand beyond recovery at Pueblo, Colorado, in 1875.

How cold is "twice as cold as zero"?

Such expressions as "twice as cold as" and "twice as hot as" are meaningless from the scientific point of view. They cannot be evaluated in terms of thermometer readings and are used only in everyday speech to indicate individual reactions or degrees of comfort and discomfort that depend on other factors besides sheer temperature as measured by the thermometer. Cold is the absence of heat and only heat is measured. In a general way heat may be defined as energy produced by molecular motion. The point at which all molecular motion is supposed to cease in substances is known as absolute zero—459.4 degrees below zero on the Fahrenheit thermometer. "Twice as cold as" is particularly meaningless, because there is no point from which degrees of cold are reckoned. Some say that when the Fahrenheit thermometer registers thirty-two degrees below zero it is twice as cold as when it registers zero, since thirty-two degrees above zero indicates

the freezing point. By the same process of reasoning it should be twice as warm when the thermometer registers ninety-six degrees above zero as it is when it registers sixty-four degrees below zero, which is manifestly absurd. It would be like saying that a person is twice as poor when he has fifty dollars as he is when he has a hundred dollars. We may, however, properly say that it is twice as many degrees above or below zero or the freezing point at one time as it is at another time, just as we may properly say that a person has twice as many dollars at one time as at another.

What is the meaning of *Mac* and *Mc* in surnames?

Mac, a common prefix in family names of Scottish and Irish origin, is a Gaelic word meaning "son" or "son of" and is believed to be derived from Gothic *maqus*, "boy." It is often shortened to *Mc* or (especially in British usage) to *M'*, and thus we may have *MacDonald*, *McDonald* and *M'Donald*. *MacArthur* literally means "son of Arthur," *McGunn*, "son of Gunn," and *M'Donald*, "son of Donald." The prefix is generally pronounced *mack* regardless of which form is used, although the *M'* form is frequently pronounced *ma*. Thus *MacArthur* is pronounced *mack-ARR-ther* and *M'Gregor* is pronounced *ma-GREGG-er*, although the *M'* form may be pronounced *mack* also when the prefix is accented, as in *M'Intosh*. There is no sure rule by which one can tell whether a name beginning with *Mac* or *Mc* is of Scottish or Irish origin. Generally speaking, however, *Mac* is more common in Scottish and *Mc* in Irish surnames. *O* as a prefix in Irish family names, now regarded as equivalent to *Mac*, had a different origin and is supposed to be derived from Latin *avus*, which became *awus* in Late Latin and Gaelic. It signified "grandfather" in particular and "forefather" or "ancestor" in general. In time *awus* became first *aw* and finally *O*. *O'Neil* originally meant "Neil was his grandfather," a reverse way of saying "he is Neil's grandson." While *Mac* means "son of," *O* means "descendant of." Welsh *ap*, as in *Rice ap Thomas* ("Rice the son of Thomas") is akin in origin to *Mac*. In Welsh the Gothic *maqus* became first *map*, then *naf* and finally *af* by dropping the *n*. Some authorities suppose that *P* in *Perry* is a remnant of Welsh *af* and that the name was once *af Erry*, "Harry's son" or "Henry's son." Latin *puer*, "boy," may be from *maqus* through a similar linguistic process. *Vich* in Gaelic meant "descendant of." *Roder-igh Vich Alpine Dhu* in Scott's *Hail to the Chief* literally means "Black Roderick, descendant of Alpine." The Alpine clan claimed descent from a mythical King Alpine. *Fitz* as a prefix in English and Irish

surnames came through Norman French from Latin *filius*, "son." *Fitzpatrick* and *Fitzhugh* literally mean "son of Patrick" and "son of Hugh." "The Fitzpatricks," wrote Horace Walpole in 1783, "are so ancient that the best Irish antiquaries affirm that they reckoned thirty generations before the first man was created." Sonship was indicated in Scandinavian by the suffix *son* or *sen*; as, *Johnson*, "*John's son*," and *Paulsen*, "*Paul's son*." An equivalent suffix in Scandinavian and Anglo-Saxon was *ing*; as, *Gooding*, "son of Good," and *Whiting*, "son of White." Other languages have similar devices. Russian *off* (*ov*), *vich* and *ovitch* (*Romanoff* and *Grigorovich*), Polish *ski* or *sky* (*Paderewski*), and Rumanian *escu* (*Antonescu*) are all suffixes signifying "son of." Italian *ini*, as in *Mussolini*, means "of the tribe or clan of." A surname containing a prefix or suffix referring to descent from parents, ancestors, family or clan is known as a *patronymic*, from Greek *pater*, "father," and *onyma*, "name."

What is a John Doe warrant?

A general legal warrant that does not specify the name of the person to be arrested, the place to be searched or the character of the goods to be seized is commonly called a John Doe warrant. One of the chief complaints of the American colonists against the British government was the use of writs of assistance, which were in effect John Doe warrants, and accordingly the federal Constitution prohibits warrants of this type. Amendment IV says: "The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizure, shall not be violated, and no warrants shall issue, but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized." This amendment, like the rest of the Bill of Rights, applies directly only to the federal government, but similar provisions are found in most of the state constitutions. *John Doe* and *Richard Roe* as fictitious legal names date back at least to the reign of Edward III in the fourteenth century. Magna Charta required that two witnesses had to be produced in every criminal action. Prosecutors in England, when they had no actual witnesses or did not wish to disclose who the witnesses were to be, fell into the habit of inserting the fictitious names of John Doe and Richard Roe as the required witnesses for the record. These particular names may have been chosen because they had been actual witnesses in an important case. At any rate, in English common-law proceedings *John Doe* came to be used for a fictitious or unknown plaintiff and *Richard Roe* for a fictitious

or unknown defendant. For centuries these names were used especially in the common-law process of ejectment, the lessor acting as plaintiff being denominated John Doe and the lessee acting as defendant being denominated Richard Roe in the proceeding. In time the name came to be used generally as fictitious designations for any parties, real or imaginary, in any action or proceeding at law. Lawyers, in place of the more impersonal *A* and *B*, employed *John Doe* and *Richard Roe*. It was only another step to the application of the names to any imaginary person, "a man of straw," the average citizen, or Tom, Dick and Harry. In 1724 Louis Houssart was tried in England for murdering his wife. The customary names *John Doe* and *Richard Roe* were entered in the form as pledges to prosecute when the case was appealed. Houssart's lawyer objected that there were no such persons as John Doe and Richard Roe. Instead of admitting the legal fiction the prosecution proceeded to produce a weaver named John Doe and a soldier named Richard Roe! The use of these sham or dummy names, adopted as a device to preserve certain niceties of the common law, was abolished in England by the Common Law Procedure Act of 1852, which required that every writ of ejectment should contain the actual names of the persons in possession of the property claimed and a description of the property "with reasonable certainty," although *John Doe* survives in connection with warrants and blanket investigations by grand juries into public affairs, especially graft cases, which are often referred to as John Doe proceedings. At one time *John-a-Stiles* (John Styles) and *John-a-Noakes* (John Noakes) were widely used in England as fictitious legal names. About 1581 Sir Philip Sidney, in *Apologie for Poetrie*, wrote: "Poets gyve names to men they write of, which argueth a conceite of an actual truth, and so, not being true, prooves a falsehood. And doth the Lawyer lye then, when under the names of *John a stile* and *John a noakes*, hee puts his case?"

How did Cleveland, Ohio, get its name?

Cleveland was named after Moses Cleaveland (1754-1806), soldier and lawyer of Canterbury, Connecticut, and the name of the city was originally spelled *Cleaveland*. General Cleaveland, who was a captain in the Continental army and who derived his later title from his rank of brigadier general in the militia, was one of the thirty-six founders and one of the seven first directors of the Connecticut Land Company, organized in 1795 to buy from Connecticut 3,200,000 acres of its Western Reserve in Ohio. In 1796 General Cleaveland was superintendent of fifty-two New Englanders who went to inspect and survey

the tract. Under his supervision a community site was laid out on the shore of Lake Erie at the mouth of the Cuyahoga River, the present site of Cleveland, where a transient trading post had been established ten years earlier. This site was named Cleaveland in honor of the general. He himself, with the majority of the party, returned to New England the same year and never again saw the city named after him. General Cleaveland was so swarthy in complexion that the Ohio Indians took him for one of their race and his friends called him by the Indian name "Paqua." The community site laid out by Cleaveland and his party became the business and political center of the Western Reserve, being incorporated as a village in 1815 and chartered as a city in 1836. The first newspaper published in the town was the *Cleveland Gazette and Commercial Register* and legend says the spelling of the name of the town was changed when a typesetter omitted the first *a* to make the name fit in the narrow masthead in the issue of July 1, 1832. The fact is that from the beginning there was a tendency to spell the name *Cleveland* and in a short time that became the accepted spelling.

How were the Nobel prizes established?

The Nobel prizes were founded by Alfred Bernhard Nobel (pronounced *no-Bell*), Swedish chemist and engineer, who made a fortune manufacturing explosives and exploiting the Baku oil fields on the Caspian Sea. After an explosion in his nitroglycerin factory killed his brother and crippled his father, Nobel determined to develop an explosive less dangerous than nitroglycerin and his efforts resulted in the discovery of dynamite. His will directed that the interest on the bulk of his nine-million-dollar estate be distributed each year in cash awards to the persons, regardless of nationality, who should be responsible for (1) the most important discovery or invention in physics, (2) the most important chemical discovery or improvement, (3) the most important discovery in medicine or physiology, (4) the most distinguished work of an idealistic tendency in literature and (5) the greatest contribution toward the fraternity of nations, the abolition or diminution of standing armies and the formation and increase of peace congresses. This will provided that the prizes for chemistry, physics and literature should be awarded by the Swedish academies of science and literature, that for medicine by the Caroline Medical Institute in Stockholm, and that for peace by a committee of five appointed by the Norwegian Storting. The will was interpreted by a code of statutes approved by the Swedish government and the Nobel

heirs. Before the prizes are distributed one-fourth of the amount is deducted for the expense of Nobel institutes for each branch of science, learning or service covered by the five annual prizes. Nobel died in 1896 at the age of sixty-three and the first prizes were awarded on his birthday anniversary, December 10, 1901. Under normal conditions the board of directors of the Nobel fund, the head of which is appointed by the Swedish government, meets each year on the donor's birthday, and the various subgroups making the awards publish the names of the winners and give each a check for the amount of the prize, a diploma and a gold medal bearing a likeness of Nobel with an appropriate inscription. The value of the prizes varies from year to year owing chiefly to economic conditions and the resulting fluctuation of the securities in which the funds are invested. At the close of the First World War the prizes sank to the lowest mark—\$30,000; in 1930 they rose to \$46,350. In 1946 the Swedish government voted to exempt the Nobel prizes from taxes. The prizes may be postponed or divided equally between two persons, but not awarded posthumously. In 1904 the peace prize, the one most often postponed, was given to the International Institute of Law, a procedure which set the precedent of giving the prize to an organization instead of an individual. Two presidents of the United States have received this prize—Theodore Roosevelt in 1906 and Woodrow Wilson in 1919. In 1935 it was awarded to Carl von Ossietzky while he was in a German concentration camp. Mme. Marie Curie has been the only person to receive more than one Nobel prize. In 1903 she and her husband, Pierre Curie, shared the physics award with A. H. Becquerel for their work with radium. Mme. Curie received the award for physics again in 1911 for her discovery of polonium. In 1935 Irene Curie, daughter of Pierre and Marie Curie, received the chemistry prize jointly with her husband, Frederick Joliot.

What is the difference between beef and veal?

Formerly *veal* was applied to the flesh of bovine animals under one year of age and *beef* to that of such animals older than one year. These definitions proved too broad for the practical needs of the public and the livestock and meat trades and therefore the United States Department of Agriculture worked out a set of market groups and designations based on both age and carcass characteristics. Bovine animals were classified as vealers, calves, yearlings and mature cattle. A vealer produces veal, a calf produces calf, and yearlings and cattle produce beef. Generally speaking, vealers are milked and under 3

months of age; calves, under 9 months; yearlings, somewhere between 9 and 18 months; and mature cattle, 18 months or more. The best veal is from the carcasses of vealers from 3 to 12 weeks old and from 40 to 300 pounds in weight. The flesh of a bovine animal less than 3 weeks old or one taken from a slaughtered cow is called bob veal. It is regarded as unfit for human food and should not be sold. Veal is usually fine grained, light pinkish in color and contains little or no intermixture of fat in the lean. Calf more nearly approaches beef than does veal. The age of the animal alone is not a safe criterion by which to determine whether a carcass should be classed as veal, calf, yearling or beef, because the essential characteristics of each group depend on size, feed, handling and other factors. *Veal*, like *vellum* (calfskin), is derived through French from Latin *vitellus*, "little calf." *Beef* and *bovine* are both traceable to Latin *bos*, "ox." *Steak* in *beef-steak* is derived from Old Norse and Icelandic *steik*, which is related to *steikja*, "to roast on a stick," and *stikna*, "to be roasted." Originally a steak was a piece cut from the fleshy hindquarters of an animal, especially a bovine one, for broiling on a spit; but now we have hamburg, salmon, pork and other steaks as well as beefsteaks.

Of what country is sugar cane native?

Sugar cane (*Saccharum officinarum*), a giant, perennial, jointed grass that is not known to grow anywhere in the wild state, is believed to have been indigenous to the East Indies. *Sugar*, as well as its cognates in other European languages, is from Arabic *sukkar*, which is probably from a Sanskrit root signifying "pebble" or "grain." Sugar cane is mentioned in Chinese manuscripts written 700 B.C., but the ancient Chinese and Hindus knew no process of extracting sugar crystals from the "sweet bamboo" and ate only pieces of the pith of the stalks much as we eat candy. After Alexander the Great invaded India in 327 B.C. his troops took back to Greece a few stalks of the "honey-bearing reed" as souvenirs, but there is no evidence that this resulted in the cultivation of sugar cane in Europe. Centuries later the cultivation of sugar cane spread to Persia whence it was carried by the Arabs into the Near East. Sugar making in the modern sense appears to have begun in Egypt. The Crusaders brought sugar cane from the Levant to Europe about the eleventh or twelfth century and after that its cultivation became common in Sicily and Spain. For several centuries sugar was costly and was used only as a medicine or as a luxury by the rich. It did not become a household article in England until Shakespeare's time. Columbus himself introduced sugar

cane into the New World while on his second voyage in 1494, supervising its planting at Isabella in Hispaniola, where it prospered beyond all expectations. Washington Irving says that the cultivation of sugar cane in the West Indies became a quick and sure means of acquiring wealth and that it was a byword in Spain that the magnificent palaces of Charles V at Madrid and Toledo were built of sugar from Hispaniola. When Diego Columbus, the admiral's son, returned to Hispaniola in 1522, interest in sugar cane had completely supplanted that in the gold mines. During the sixteenth and seventeenth centuries the plant spread to nearly all the European colonies in the tropics and subtropics. When Captain James Cook first visited Hawaii in 1778 he found the natives cultivating several varieties of sugar cane, but the Hawaiians, like the ancient Chinese and Hindus, used the sweet cane only in the raw state. It is supposed that the original Polynesian settlers in Hawaii brought sugar cane with them from Samoa more than a thousand years earlier. In 1747 Andreas Marggraf, a German chemist, discovered that beets contain large quantities of sugar identical with cane sugar. His pupil, Franz Karl Achard, was granted an estate in Silesia on which to experiment, and by 1806 his first factory was turning out beet sugar successfully. In 1812 Napoleon boycotted cane sugar, then produced chiefly in the British-controlled West Indies, known as the "Sugar Islands," and sent French scientists to Silesia to learn Achard's beet-sugar methods. Napoleon's "sugar war" was ineffective, but it firmly established the beet-sugar industry in France. The beets used at first produced only about 8 per cent of sugar; those now used, twice that much. Between seven and twelve tons of sugar cane are required to produce a ton of sugar at the mill.

How did "Tell it to the marines" originate?

"Tell it to the marines" is a proverbial English expression signifying that incredible and preposterous tales should be told to greenhorns, not to those who know better. The saying probably arose from the fact that among English sailors the marines were formerly regarded as so green and gullible that they would believe any story, no matter how absurd or extravagant. In *The Island* (1823) Lord Byron wrote: " 'Right,' quoth Ben, 'that will do for the marines.' " A footnote explained: "*That will do for the marines, but the sailors won't believe it*, is an old saying; and one of the few fragments of former jealousies which still survive (in jest only) between these gallant services." The expression occurs also in Sir Walter Scott's *Redgauntlet* (1824), and in *Black-Eyed Susan*, a melodrama written by Douglas William Jerrold

and first produced in London at the Surrey Theatre in 1829. Sometimes the expression is elaborated to "Tell it to the *horse marines*," implying that, since horse marines do not exist, the story is an absolute fabrication. There is still some professional antipathy between the two branches of the service and the sailors proper are fond of making up jokes at the expense of the sailor-soldiers known as marines. Since marines were reputed to be poor seamen, the English sailors used to call them *gulpins*, suggesting that they were gullible and would swallow almost anything. An empty liquor bottle was called a "marine officer." According to a popular story, "Tell it to the marines" originated with King Charles II in 1664 and was reported by Samuel Pepys in his famous *Diary*. This story was printed in the issue of the United States Marine Corps *Gazette* for December, 1918, and became widely accepted as authentic. Many attempts were made to find the story in the works of Pepys, even unpublished manuscripts being examined for the purpose. As a matter of fact the story was invented by Colonel William Price Drury of the British Royal Marines and first printed in 1904 in the preface of a book containing several naval stories. Colonel Drury wanted to give the famous expression an origin more creditable to the marines than that generally accepted. In 1930 Colonel Richard Foster of the Royal Marines undertook to trace the popular story to its source for Brigadier General George Richards of the United States Marine Corps. Colonel Drury, who had retired from service and was then mayor of Saltash in Cornwall, wrote Colonel Foster: "The letter from Brigadier General Richards of the U.S.A. Marines has given me much amusement and not a little remorse. The story, *Tell it to the marines*, which he quotes so seriously, is taken from the preface to my earliest literary crime, *The Petrified Eye*, and is a leg-pull of my youth of which I have grown a little ashamed. I seem to have forged the style of Samuel Pepys so successfully that many besides our distinguished American comrade have wasted time in hunting through the *Diary* to verify my statement. For it simply does not exist, being no more than a fabrication of my mischievous brain. At the same time I venture to think my explanation of the obnoxious phrase will serve as well as any other." The following is Colonel Drury's original story as reproduced in the Marine Corps *Gazette*:

Tell it to the marines. The saying is traced to Pepys, secretary to the admiralty and the author of the famous *Diary*, and it is said by him to have originated with Charles II.

"I have had speech," wrote Pepys, "with the Captain of the *Defyance*, who

hath but lately returned from the Indies, and who told me the two most wonderful things that ever I think I did hear in my life." Among the stories told were of flying fish in the air.

"Fish flying in the air!" exclaimed his majesty. "He, he! a quaint conceit, which 'twere too good to spoil wi' keeping."

"What sir (he turned and beckoned to the Colonel, Sir William Killigrew, of the newly raised maritime regiment on the foot, who was following, in close conversation with the Duke of York), we would discourse with you on a matter touching your element. What say you, Colonel, to a man who swears he hath seen fishes flying in the air?"

"I should say, sire," returned the sea soldier simply, "that the man hath sailed in southern seas. For when your majesty's business carried me thither of late I did frequently observe more flying fish in one hour than the hairs of my head in number."

Old Rowley glanced narrowly at the Colonel's frank, weatherbeaten face. Then with a laugh he turned to the secretary and said: "Mr. Pepys, from the very nature of their calling, no class of our subjects can have so wide a knowledge of the seas and lands as the officers and men of our loyal maritime regiment. Henceforth, whenever we cast doubt upon a tale that lacketh likelihood we will tell it to the marines—if they believe it, it is safe to say it is true."

Do cashew nuts grow in the ground or on trees?

Cashew nuts grow on an evergreen tree (*Anacardium occidentale*) which is native to tropical America and which has been naturalized in many warm countries. Many people are under the impression that cashew nuts grow in the ground because they resemble peanuts in general size and shape. The Portuguese settlers in Brazil recognized the commercial value of these remarkable nuts and carried them to the West Indies, Africa and the Far East. As early as 1578 the cashew tree was so common in India that it was mistakenly supposed to be a native of the East Indies. Like rubber and quinine, the cashew nut had to be transplanted to distant countries before its real commercial value was recognized in its native land. Some of the Brazilian Indians called the tree *acajou*, which became *caju* in Portuguese and *cashew* in English. Botanically speaking, the cashew nut is not a nut at all. It is the kidney-shaped, double-shelled seed attached outside the lower end of the cashew apple, which is the pear-shaped, fleshy, edible fruit borne in clusters on the cashew tree. The cashew nut is edible only after the caustic oil known as cardol has been expelled from the shell by roasting. The rich, cream-colored cashew nut is best known to the public when roasted and salted, but it has other uses. Besides being used in confections, the cashew nut yields a valuable culinary oil,

similar to olive oil, and its juice is used by the Brazilian natives much as we use iodine in treating cuts and abrasions. In some parts of South and Central America the cashew apple is prized more highly than the nut. This fruit has firm, white flesh, a pleasant acid taste and is reputed to possess medicinal properties beneficial to those afflicted with scurvy. The natives believe that chewing the leaves of the tree will preserve their teeth. This tree yields "caju gum" and its sap, upon exposure to air, turns dark and provides an indelible ink.

Why is whistling forbidden on battleships?

Naval regulations require that all routine duties aboard battleships and other naval craft be carried out with as little noise and confusion as possible. Although the United States Navy Regulations do not specifically forbid whistling, since time immemorial it has been considered unseamanlike and contrary to tradition and custom for a sailor to whistle while on duty aboard his ship, and the practice is not countenanced on naval vessels. The naval attitude toward whistling may account for the following order issued in 1920 by Captain W. W. Gilmer of the United States Navy, then naval governor of Guam: "The practice of whistling is an entirely unnecessary and irritating noise which must be discontinued." The feeling that seamen should not whistle while on shipboard appears to be widespread and ancient. In *The Queer, The Quaint, The Quizzical: A Cabinet for the Curious* (1882) Frank H. Stauffer wrote: "Zoroaster imagined there was an evil spirit that could excite violent storms of wind. The sailors are tinctured with a superstition of the kind, which is the reason why they so seldom whistle on shipboard; when becalmed, their whistling is an invocation." Some authorities suppose the superstition about whistling on ships grew out of practical considerations. In the days of sailing ships as much quiet on board as possible was required to detect the operation of the vessel by the sound of the wind in the sails. Then, too, whistling might easily be confused with the pipe or whistle blown by the boatswain to attract attention before transmitting orders and signals of the officers to the members of the crew. Confusion of private whistling with these signals might endanger the lives of men engaged in hoisting or lowering heavy weights. Continual admonition on this point by the officers may have given rise to the superstition that whistling on shipboard brings on storms or bad luck to the ship. The superstition is by no means extinct. Occasionally at the present time a seaman refuses to serve on a ship because it has been "jinxed" by somebody whistling on board. But in olden days it was all

right when a sailing vessel was becalmed "to whistle for a wind," because in that case the whistling was in the nature of an invocation. The belief among sailors that in a calm a wind could be raised by whistling for it is very ancient. Some authorities suppose that "You may whistle for it," meaning "do not expect it," also alludes to sailors whistling for the wind, but this latter expression may have been suggested by the refusal of a person or dog to heed a whistle or call and it may be akin to "not worth the whistle."

Is any breed of dogs naturally tailless?

The schipperke poodle or lap dog is the only breed of canines that is naturally tailless. No trace of a tail occurs in the typical schipperke when born. This breed originated several centuries ago in what is now Belgium and is related to the Pomeranian, which it resembles except for its shorter hair. *Schipperke* (pronounced *SKIPP-er-ke*) is a Dutch dialect diminutive of *schipper* and literally means "little skipper" or "little boatman." This dog is supposed to have been so named because it was widely used in the Netherlands as a guard or watchdog on canal boats. It has a foxlike head, triangular, erect ears, broad chest, a short, thickset body, straight back and forelegs and a black, abundant and slightly harsh coat of hair. Most short-tailed dogs, such as the spaniels and terriers, commonly seen with stubby tails an inch or two long are made so by docking their tails when they are puppies. Some of the English sheep dogs are referred to as bobtailed, and occasionally one is born without a tail, but as a rule they are born with tails and the tails are cropped so short that the animals have the appearance of never having had tails at all. There is a common belief that the tails of thoroughbred dogs are bitten off. The usual method of bobtailing dogs—supposed to be completely painless—is to tie a string tight around the tails of the puppies when they are only a few days old.

How far back can one remember?

The average adult cannot remember many things that happened to him at an earlier age than four or five. What may be described as "earliest remembrance" varies widely with individuals. Many grown persons, including some very old ones, have hazy recollections of isolated incidents and experiences that took place when they were only two or three years of age. Franklin D. Roosevelt said he could remember a torchlight parade during the Cleveland-Blaine presidential campaign when he was only eighteen months old. In Harriet Connor

(Mrs. Herbert D.) Brown's *Grandmother Brown's Hundred Years* (1929), we are told that Grandmother Brown at ninety-nine could remember in considerable detail a schoolroom as she saw it at the age of two. Herbert D. Brown himself remembered the last time his mother nursed him, although his mother admitted that she probably nursed her children longer than did most mothers of her day. Abraham Lincoln wrote that he could remember very well a farm his family lived on when he was four and never had seen again. It is hard to determine with any degree of accuracy how far back a person can remember because of the tendency to confuse the real with the imaginary. A child's imagination is so vivid that often he thinks later he has seen things that he has only heard of from his parents or other members of the family, and what appears to be firsthand information is actually only secondhand, coming from others rather than through personal observation or experience. This accounts for the fact that some persons seem to remember things that happened before they were born. Some authorities suppose that no impressions made on the brain are ever completely obliterated during life and require only the proper stimulus to bring them back to mind. In *The Tempest* Shakespeare touches on this subject in a colloquy between Prospero and his fifteen-year-old daughter Miranda. Prospero suggests that Miranda could not remember when they came to the island because she was then "not out three years old." But Miranda had a dreamlike recollection that she was once attended by four or five women.

What are fairy crosses?

Fairy crosses are twinned crystals of staurolite, a dark aluminum-iron silicate. The scientific name is from Greek *stauros*, "cross," and *lite*, a suffix formed from Greek *lithos*, "stone." Superstitious people say these stone crosses, like the rabbit's foot, will bring good luck to those who carry them as charms. Both Theodore Roosevelt and Woodrow Wilson carried fairy crosses for luck pieces. Fairy crosses are found in limited numbers in many parts of the world, but the greatest number of good specimens is found in Patrick County, Virginia, and Fannin County, Georgia. In one area of about fifty acres on Bull Mountain in Patrick County they occur in abundance at a depth of ten or twelve feet. Fairy Stone State Park, comprising 5,000 acres near Bassetts in Henry County, Virginia, takes its name from these stones. The crystals occur in at least three distinct types—Roman, Maltese and St. Andrew crosses. Like Indian relics, they are often found by farmers while plowing and are picked up after hard rains.

In that part of Virginia fairy crosses are gathered in large numbers, cut into shape and mounted in metal of some kind for the tourist trade. Although nearly perfect natural crosses are sometimes found, most of the fairy crosses sold as souvenirs have been trimmed more or less. Staurolite crystals are especially suitable for watch charms, scarf pins and similar jewelry. When cut and polished they have a reddish, rusty tinge. Imitation fairy crosses are made of talcose rock. The natural ones will scratch glass while the softer imitations will not. Virginia mountaineers have several legends concerning the origin of these "crystal tears of the Blue Ridge." Long ago, according to one legend, when the Indians were still supreme on the continent, the Great Spirit showered these crosses upon the earth as a sign of coming salvation to the savage race. Another legend—the one that gives the fairy crosses their name—says that when Jesus was crucified angelic messengers carried the news to all parts of the world, and when the tidings reached the fairies and elves in the Blue Ridge they at once ceased their merry pranks and began to weep, and as they wept the tears fell upon the earth and solidified in the form of the crosses.

How did *three sheets in the wind* originate?

A drunken person is said to be "three sheets in the wind." This phrase apparently originated among English sailors. It was used in its modern sense already in 1821 by Pierce Egan, English sports writer and author, who wrote: "Old Wax and Bristles is about three sheets in the wind." In *Dombey and Son* (1846) Charles Dickens wrote: "Captain Cuttle looking, candle in hand, at Bunsby more attentively, perceived that he was three sheets in the wind, or, in plain words, drunk." There is no positive evidence that the term ever had a specific nautical significance among sailors. Although landsmen sometimes refer to a sail as a sheet, in sea parlance a sheet is not a sail, as a landsman would naturally suppose, but a rope or chain attached to a sail to regulate the angle at which it is set in relation to the wind. *Sheet* has another nautical sense. The spaces at each end of an open boat not occupied by rowers' seats are known as foresheets and stern sheets. One writer says that if the sheets are loose the ship will "reel and stagger like a drunken man" and he derives the popular slang phrase from that circumstance. Sometimes *three sheets in the wind* is completed by *and the other one flying*, which suggests that lack of control is the point of the phrase. That the phrase originally alluded to the action of the sails of a ship when the sheets or ropes were loosened is quite probable, but the exact application of *three sheets* is not known for certain.

"In the wind's eye" signifies directly opposed to the wind and in British seamen's slang "a sheet in the wind's eye" means "an early stage of intoxication, not drunk, but *getting on*." According to *Webster's New International Dictionary*, to be or have a sheet in the wind means to be somewhat drunk, while to be or have both (or three) sheets in the wind means to be very drunk. The following theory was advanced many years ago by a correspondent: "*Sheet* means chain. *Wind* in short for windlass. Therefore three sheets in the wind may simply mean three chains in the windlass. If you ever tried to stand on a boat so rigged in a very mild gale you would certainly see an imitation of a man who had trifled with our noble experiment."

Do ships sink to the bottom?

There is a popular notion that vessels that sink at sea do not go down all the way to the bottom, but remain suspended in the water because of the increased pressure and density at great depths. The fact is that any modern steamship will sink all the way to the bottom regardless of the depth of the water. Pressure in itself does not enter into the question, because the pressure of the water is exerted equally from all directions. Increased density, which is owing largely to the increased pressure, is not an important factor, because water is almost incompressible. The compressibility of water is so slight that even at a depth of a mile a cubic foot of water weighs only about half a pound more than at the surface. The law of floating and sinking bodies is simple: If a body weighs more than its equal volume of water at any depth, it will sink and continue to sink until it reaches the bottom; if it weighs less, it will float on the surface; and if it weighs the same, it will stay wherever placed. In other words, an object sinks in water if its average density, including entrapped air, is greater than the density of the water in which it is immersed. Fresh water weighs about sixty-two and four-tenths pounds a cubic foot. Therefore, since, according to the principle of Archimedes, the lifting effect on a submerged body is equal to the weight of the displaced liquid, any object weighing more than sixty-two and four-tenths pounds a cubic foot will sink in fresh water. Sea water, which is somewhat denser owing to its salinity, weighs about sixty-four pounds a cubic foot at the surface, and about sixty-nine pounds a cubic foot in the deepest known places. Any object weighing more than sixty-nine pounds a cubic foot will sink to the bottom in such water. All modern vessels, if filled with water, will weigh more than sixty-nine pounds a cubic foot and accordingly would sink to the bottom of the sea

immediately. Of course, it is quite possible that a ship of the old wooden type, carrying a cargo of low-density bulk like cork, might have the same weight as its equal volume of water. Such a vessel, after filling with water, would remain suspended in the sea at a distance from the bottom where the ship displaced exactly an equal weight of water. The condition of such a ship would be similar to that of a waterlogged piece of wood that sinks to a certain depth but not to the bottom. The United States Bureau of Standards says that, at the mouth of a large river like the Amazon, where a layer of fresh water flows for miles over the denser sea water, it is conceivable, though highly improbable, that some wooden ships with cargoes of low density might sink through the fresh water and remain "half-sunk" for some time at the boundary between the fresh river water and the salt sea water. The equilibrium of such a vessel, however, would be precarious and within a short time it would either rise to the surface or, which is more probable, sink to the bottom. There is little likelihood of a modern ship floating dangerously just beneath the surface. If the wrecked vessel floats at all it will float with a fraction of it above the water level. It is absurd, experts say, to suppose that heavy steamships would remain suspended in the ocean between the surface and the bottom.

What tree has three distinct types of leaves?

The sassafras tree, a common North American member of the laurel family, contains leaves of three decidedly different patterns. This fact is referred to in the scientific name of the species, *Sassafras variifolium*, the second element of which means "of different leaves." One type of leaf is ovate with both ends tapering, another is mitten shaped with a thumblike lobe on one side and still another is three lobed with thumbs on both sides. All three of these different types of leaf may be found on the same sassafras tree, and even on the same twig, at the same time. The author has several times met persons who had the odd notion that sassafras trees do not propagate from seeds or shoots, but grow from grub worms, a belief that no doubt arose from the fact that the wormlike larvae of certain beetles are partial to the soil around the roots of trees of this species. The flowers of this species are green and the male and female flowers are borne by separate trees. In the North sassafras trees seldom grow higher than fifty feet, but in the South they often attain a height of a hundred feet and a circumference of six or seven at the base. These trees are notable for the great variety of their brilliant autumn colors. The

entire tree has a characteristic pungent flavor. Oil of sassafras, made from the aromatic bark of sassafras roots, is used in perfumery and in flavoring beverages and confectionery, and sassafras tea, popularly known as "sass tea," was once widely used as a tonic to "clear the blood." A mucilaginous substance from sassafras leaves and twigs was formerly much used in the South to give consistency and flavor to gumbo soups.

Why is cannel coal so called?

The earliest known use of *cannel* as applied to coal occurred in 1538 in John Leland's *Itinerary*, where it was spelled *canel*. Apparently the term originated in northern Britain and is a corruption of *candle*, alluding perhaps to the fact that coal of this type resembles a candle in burning readily with a bright flame and without producing smoke. In Scotland it is sometimes called "parrot coal," a name suggested by the crackling or chattering noise it makes when burning. Cannel is a compact, lusterless bituminous coal, fine in texture, low in heating power, rich in gas and, in the opinion of some geologists, was formed of animal as well as vegetable matter. It can be cut and polished like jet, and artifacts of this substance have been found in the prehistoric mounds in the Ohio Valley where cannel is common. This variety of bituminous or subbituminous coal is found and mined to some extent in nearly all the states where bituminous coal is mined. The higher grades of cannel can be used as a fairly satisfactory substitute for ordinary bituminous coal except in the making of coke.

How did "tweedledum and tweedledee" originate?

Tweedle is an old English word of echoic origin and is supposed to be imitative of the sound made by a musical instrument, especially a fiddle. A player who produces a succession of shrill, high-pitched sounds on a fiddle or who plays upon the instrument triflingly or carelessly is said to tweedle. *Tweedledum* and *tweedledee* are nothing more than humorous expansions of *tweedle* and are employed to suggest that an alleged difference between two things or parties is imperceptible or insignificant, corresponding to the somewhat more colloquial "six of one kind and half a dozen of another." The earliest known use of "tweedledum and tweedledee" occurs in *On the Feud Between Handel and Bononcini*, a satire written by John Byrom, English poet and stenographer, and published in the *London Journal* June 5, 1725. At that time George Frederick Handel, a German, and Giovanni Battista Bononcini, an Italian, were the two most popular

composers in London. Scarcely an opera was produced for several years in the British metropolis that did not contain airs by either the German or the Italian. A keen rivalry grew up between the melodious Italian and the superior German and each had his partisans. This rivalry was fanned into a flame when the public had an opportunity to compare the work of the two composers in the same opera, *Muzio Scevola*, on which they collaborated. Bononcini, who later left London when detected in a musical plagiarism, finally went so far in the quarrel as to attack his rival in a pamphlet. In the midst of this historic musical controversy Byrom wrote these lines:

Some say, compar'd to Bononcini
That Mynheer Handel's but a ninny;
Others aver that he to Handel
Is scarcely fit to hold a candle.
Strange all this difference should be
'Twixt tweedledum and tweedledee.

The last couplet has been attributed erroneously to both Swift and Pope. In his Jackson Day address in 1939 President Franklin D. Roosevelt said the United States would be in a sad state if it had to choose between a Democratic tweedledee and a Republican tweedledum. Later in the same year President Roosevelt wrote to the Young Democrats in session at Pittsburgh: "The Democratic party will not survive as an effective force in the nation if the voters have to choose between a Republican tweedledum and a Democratic tweedle dummer."

What is the most southern city in the world?

Magallanes, Chile, is farther south than any other settlement of sufficient size and commercial importance to deserve being called a city. It lies on the extreme southern end of Patagonia on the Strait of Magellan at about fifty-three degrees south latitude. Started in the nineteenth century as a penal colony under the name *Punta Arenas*, "sandy point," it developed into an important point of call and coaling station for ships trading between the Pacific and the Atlantic, although the Panama Canal later diverted much of this traffic. When Chile created the territory of Magallanes in 1930, Punta Arenas was made the capital and its name changed to Magallanes. Inland from Magallanes are vast sheepgrazing lands from which wool and skins are sent to the city for export. It has only about two hours of sunlight a day and the climate is inhospitable. The last estimate of its

population was 33,000. Ushuaia, capital and port of Argentina's territory on the island of Tierra del Fuego, is farther south, being at about fifty-five degrees south latitude, but it is little more than a village compared with Magallanes. The post office at Ushuaia is the most southerly regular post office in the world. There are smaller settlements still farther south in South America and on the neighboring islands, but they are not indicated on the average map. The islands extending for 200 miles southward from Magallanes are inhabited by only scattered aborigines and a few white people. The Argentine weather station on Laurie Island in the South Orkneys southeast of Cape Horn is the southernmost regularly inhabited spot. The Yahgans, a remnant of a dwindling Indian tribe on the south coast of Tierra del Fuego, are the most southerly aborigines in the world. Wellington, on the North Island of New Zealand, is the world's southernmost national capital.

Are German shepherd dogs descended from wolves?

There is no evidence to support the theory that so-called German shepherd dogs have been developed within recent times by crosses with wolves. They sprang from a union of several kinds of sheep dogs in Germany, five or six root stocks being originally combined to produce the breed. That they may contain wolf or dingo blood inherited from the dim past is not improbable, but if we go back far enough all dogs are civilized wolves, for the wolf is the ancestral form of all domestic dogs. Charles Darwin supposed dogs to be descended from several species of wolves and wild dogs domesticated at different times and in different parts of the world. There is no reason to suppose that the German shepherd has a greater percentage of wild blood in its veins than most other breeds. The impression that it has no doubt arose from the fact that these dogs, owing to careful selective breeding, more closely approximate the ancestral type. That they revert more readily to wolfish practices has not been established. They differ materially from wolves in having finer heads, smaller teeth and shorter, more uniform hair. As a rule they are alert, intelligent and loyal to their masters, although they are high-spirited and sometimes difficult to control. Their color ranges from black to pure white, but most of them are reddish brown or black and tan. At least three distinct varieties are recognized—smooth coated, long coated and rough coated. In 1896 a number of German shepherd dogs were employed as police dogs at Hildesheim, Germany, and from this date their individuality as a separate breed began to

develop. Within the next ten years so many of them were used on police patrols that the breed came to be generally known as German, French or Belgian police dogs, depending on the country where they were bred. During the First World War they came into prominence because of their notable work with Red Cross units and as patrols, messengers and ration carriers on the battlefields, especially on No Man's Land. About 1916, because of antipathy for Germany, these dogs were identified with Alsace in Allied countries, and they are now known in some parts of the world as Alsations or Alsatian wolf dogs. In 1918 the American Kennel Club arbitrarily dropped *German* from the official name and decided to call the breed simply *shepherd dog*. *German police dog* is not the name of a breed but merely a popular name for a German shepherd dog trained for police duties. The German Kennel Club officially styles the breed *Deutscher Schaferhund*, "German shepherd dog."

Do snakes travel in pairs?

Neither venomous nor nonvenomous snakes travel in pairs and there seems to be no scientific foundation for the common notion that if a snake is killed its mate will soon appear and seek vengeance on the slayer. Several snakes of the same species are often found prowling about in a restricted territory, owing to the fact that a plentiful food supply attracts them to the same place. Male and female snakes, of course, meet for mating purposes, but after copulation they do not generally remain together. There is no evidence that either the male or the female takes any interest whatever in the offspring after they are born or hatched. Little credence can be given to the oft-repeated story that murders used to be committed in India by taking advantage of the supposed habit of snakes to travel in pairs and the tendency of the survivor to seek vengeance for the destruction of its mate. According to the usual version of the story, the murderer would kill one of a pair of snakes and drag the dead snake over the ground to the bed of the intended victim. The slain snake's mate, following the scent, would conceal itself near the couch and strike the unfortunate occupant while he was asleep.

Why are second-rate actors called hams?

Virtually all authorities are agreed that *ham*, applied contemptuously in American theatrical slang to low-grade actors, variety performers and Negro minstrels, is a shortened form of *hamfatter*, which is still sometimes used in the same sense. But just how *hamfatter*

originally became associated with second-rate actors is not clear. Some dictionaries assert that the term is derived from an old Negro minstrel song entitled *The Hamfat Man*, and it has been suggested, plausibly enough, that the term arose from the practice of black-faced comedians who put ham fat on their faces to insure easy removal of the blackening after the show. The song, however, may have been suggested by the term rather than the term by the song, and this theory is weakened considerably by the fact that John S. Farmer, in *Americanisms, Old and New* (1889) wrote that *ham* was sporting slang for a loafer and defined *hamfatter* as "A recent name, in some quarters of New York for a second-rate dude or masher, and more especially applied to the habitués of the Rialto in that city." Farmer quoted a current newspaper article to illustrate the meaning of the word at that time. The theory that *ham* in this sense is derived from *Hamlet*, and alludes to the common ambition of actors to play in the Shakespearian tragedy of that name, can be dismissed as purely fanciful. If *ham* had been first applied to blackfaced comedians and Negro minstrels one might see some connection between it and *Ham*, who was the second son of Noah and the father of Canaan and who is popularly regarded as the progenitor of the colored race. In Hebrew *Ham* means "swarthy." Originally *ham actor* meant an inferior player, but now it also means a tyro or amateur performer.

Do scorpions commit suicide?

The common notion that scorpions commit suicide by stinging themselves to death when tortured, especially when touched by fire or a drop of whisky, is not borne out by scientific investigation. Apparently the poison of the scorpion has no effect on the individual itself or on other members of the same species. The belief that scorpions sting themselves to death undoubtedly arose from their habit of curving the tail over the back and touching the body with the extremity. Often when they appear to be stinging themselves they are merely engaged in convulsive efforts to remove the cause of irritation or pain. If they did sting themselves in their struggle the poison would have no ill effects on them. Scorpions, which range in length from one to ten inches or more, belong to the Arachnida or spider family, but they look more like crayfish or small flat lobsters than spiders. They differ from spiders in being elongated and in having the last five segments of the body modified into a flexible tail provided with a stinger that is supplied with venom by a pair of glands. When human beings are stung the poison produces swelling, nausea and a tend-

ency to paralyze the nerve centers in the back and the brain that control breathing. The sting, though very painful, is seldom fatal to human beings except to those having weak constitutions. Experiments indicate that the venom is essentially the same in chemical composition as that of rattlesnakes and honeybees. It is the quantity rather than the quality of the venom that makes the difference. When the poison from honeybees is injected into an incision in the human body in large quantities it produces virtually the same effects as the sting of a rattler or scorpion, depending on the amount of venom. As a rule the sting of the species of small scorpions found in the temperate zones is not more severe than that of a hornet, but the poison of a few small species is as virulent as that of the larger ones. Some persons after being stung several times seem to become immune to the poison. When a person is stung by a scorpion the venom should be pressed or sucked from the wound as quickly as possible and a solution of ammonia applied externally and taken internally. If the sting is on a limb the application of a ligature is desirable. Scorpions are native to tropical and subtropical regions and are nocturnal in habits. These rapacious arachnids eat insects, slugs, spiders and even small lizards and mice, which they seize with their pincerlike front legs and kill with their tail stingers. The females give birth to living young and the young ride on the mother's back several days until able to fend for themselves. In the United States *scorpion* is erroneously applied to several species of lizards and skinks.

What animal bears its young in litters all of one sex?

The peba, or nine-banded armadillo, bears its young in litters of four and the members of any given litter are invariably of the same sex. So far as known this is a characteristic of no other animal, and scientists believe it is due to the fact that in this species all the members of a litter are developed by the cleavage of a single germ cell. The nine-banded armadillo, about the size of an opossum, is found, in several varieties, from Texas and Arizona to Paraguay and Argentina, and it is the only species of *Edentata*, "toothless," which includes the armadillos, anteaters and sloths, whose range is as far north as the United States. Edentates are restricted entirely to the New World, and most species of armadillos, which vary in length from ten inches to three feet, inhabit the tropical regions of South America. Armadillos derive their name from the diminutive of Spanish *armado*, "armed," alluding to the fact that the skin of members of this family of mammals is covered with bony, platelike armor. This armor is

composed partly of bucklerlike plates and partly of movable transverse bands, the latter giving the body considerable flexibility. The nine-banded armadillo is so called because its armor includes nine movable bands or scutes. All armadillos are well protected against enemies. In spite of their short legs they can run rather fast, but the rapidity with which they can dig a hole and disappear into the ground and the tenacity with which they cling to their subterranean refuges afford their chief method of escape. A giant South American armadillo in the New York Zoological Park dug itself out of sight in hard ground within five minutes. When taken unawares armadillos roll up, tortoise-like, into a compact ball, withdrawing the head and legs within their natural fortress, and present their armor to all sides. The limbs and the softer parts of the body are then protected from the teeth of predatory animals. Armadillos spend most of the time in their burrows and are seldom seen except at night, when they venture forth to feed. They are omnivorous eaters and their diet consists of worms, snails, beetles, grasshoppers, reptiles, fruits, roots and carrion, but ants and similar insects are the favorite item on their menu. The flesh of the armadillo is said to be tender, white and of the flavor of young pork, and it is highly esteemed as food, particularly by the native Indians of South America. In the Southwest the armadillo is sometimes called "the poor man's pig" and its flesh shares honors with opossum meat as a delectable dish when roasted with sweet potatoes and served with brown gravy. The animal is harmless and inoffensive, eating no crop and doing virtually no damage to agriculture except occasionally when it destroys plants by digging holes in its search for insects. In Texas and Arizona the peba has been charged with destroying the eggs of quail and other ground-nesting birds, but scientists believe that the armadillo does not habitually seek birds' eggs for food. As a rule the damage done by armadillos is more than offset by the good they do in destroying harmful insects and other pests. Their chief enemy is the fact that their shells make attractive baskets.

Do persons blind from birth enjoy smoking?

Whether persons who have been blind from birth or for many years enjoy smoking is a controversial question. Many authorities maintain that a smoker must see the smoke to enjoy tobacco thoroughly. That a great many blind persons smoke pipes, cigars and cigarettes and enjoy them as much as others do is an established fact, but it is said that as a rule persons who have been blind from birth

or for many years get very little satisfaction from smoking unless they inhale. This, if true, seems to indicate that the pleasure derived from smoking is dependent much more on sight and much less on taste and smell than is generally supposed. A normal person generally does not enjoy smoking in the dark as much as he does in the light, and this is particularly true if he cannot see the fire or smoke of his pipe, cigar or cigarette. It is not uncommon for a person smoking in the dark to continue to pull on his pipe long after it has gone out. Apparently the imaginary smoke gives him as much enjoyment temporarily as real smoke would. Any smoker can easily test this in a limited way by smoking with his eyes closed. Not infrequently on a cold day, when a person can "see his breath," a smoker will continue to puff on a pipe, cigar or cigarette that has gone out without his being aware of the fact, the visible vapor from his breath creating a perfect illusion of smoke for the time being. Many persons, though very particular about the brands of tobacco they use, are unable to distinguish between different brands when blindfolded. A person who has been blind from birth generally must develop a keener sense of smell and taste for tobacco fumes if he desires to enjoy smoking. Generally blind smokers not only inhale but smoke more rapidly than normal persons do.

Are soapsuds beneficial to plants?

Whether soapsuds are beneficial or injurious to plants is a question often raised. The United States Department of Agriculture says soapy water is probably beneficial to plants, especially when it is applied during dry weather; but it is believed that the mere presence of the soap has little effect on the plants one way or the other, and there is probably no real stimulative effect from that source. Plants so treated grow faster chiefly because of the extra supply of moisture. Soapsuds, however, make a good soil dressing, and plant experts recommend a bath in soapy water to rid house plants of injurious insect pests.

Who said: "The public be damned"?

"The public be damned," a popular saying supposed to express the typical attitude of big business toward the common people, is generally attributed to William Henry Vanderbilt (1821-1885), capitalist and railroad magnate, to whom it was first ascribed in an article in the *Chicago News* of October 9, 1882. The circumstances under which Vanderbilt is supposed to have used the expression have been investigated several times and there are several versions of what

actually took place. Some authorities, because of the conflicting evidence, even suspect that the expression was coined by a newspaper reporter and attributed to Vanderbilt. The capitalist, then president of the New York Central Lines, went West shortly after the Pennsylvania Railroad had begun to operate a fast luxury train in competition with his line. Two free-lance reporters named Clarence Dresser and John Dickinson Sherman, who supplied several Chicago newspapers with news, interviewed Vanderbilt in his special car at Michigan City on October 8. The reporters agreed that Sherman should ask the railroad magnate a list of questions they had prepared. According to the report in the *News* the next morning, Sherman asked Vanderbilt whether his limited express train paid. Vanderbilt replied that the train did not pay expenses, that the company ran the train because forced to do so by the action of the Pennsylvania Railroad and that the New York Central Lines would abandon its limited express train if it were not for the competition. Then the reporter asked whether the company didn't run the train for the benefit of the public. "The public be damned!" replied Vanderbilt. "What does the public care for the railroads except to get as much out of them for as small a consideration as possible? . . . Railroads are not run on sentiment but on business principles." As a result of this article in the *Chicago News* the saying, "The public be damned," soon became popular throughout the country. Interviewed in Denver later, Vanderbilt denied that he had used these words and said they were an injustice to him.

Why are Irishmen called micks?

Mick is a corruption of *Michael* and is applied to Irishmen in general because Michael (after the archangel and saint of that name) is a common Christian name among them. The slang nickname is generally resented by the Irish and is seldom employed except humorously or contemptuously. In telling Irish stories it is customary to substitute the more friendly *Mike* for *Mick* as a short and familiar form of Michael.

Why are cows milked from the right side?

The almost universal custom of milking cows from the right side probably originated in man's decided preference for the right hand. Most people are right-handed and they find it more natural and possibly somewhat easier to manage the receptacle with the left hand and to do the heavier part of the milking with the stronger right

hand and arm. When the milker sits on the right side of the cow his right arm has more room than it would have if he sat on the left. The custom became general and persists, even among left-handed people, because it was found advisable to train all cows to be milked from the same side. Cows trained to be milked from one side often resent being milked from the other and not infrequently they make it uncomfortable for the milker under such circumstances. When a cow freshens she can be trained to be milked from the left side just as well as she can be trained to be milked from the right side, and some farmers and dairymen do milk their cows from the left side, though the practice is not common. Dairymen who use mechanical milkers generally attach the pumps from either side of the animal, and occasionally one finds a farmer who milks his cows indiscriminately from either side. Sometimes a cow will have such a large udder that milkers find it more satisfactory to milk some of the teats from one side and some from the other. A rural correspondent suggests that cows may have been milked on the right side originally because their stomachs are somewhat to the left, causing that side to bulge out more and making it more difficult for the milker to reach the udder.

Does hot water crack a thin glass easier than a thick one?

A thick glass filled with a hot liquid is more likely to crack than a thin one is. Likewise thick glassware immersed in hot water is more likely to be broken than is thin glassware. Glass, like most solid substances, expands when heated; being a poor conductor of heat, some sections of it expand more than others. When one side of a thick glass comes in contact with a hot liquid that side expands faster than the other and produces a strain that may crack it. What actually happens in the case of the tumbler suddenly filled with hot liquid is that the outer layers are strained and burst by the expansion of the inner layers. A thin glass is not cracked so readily by a hot liquid because the heat can reach all parts more quickly and cause them to expand together. That is why the beakers generally used in laboratories by chemists are composed of very thin glass.

What is the legend of the Blarney stone?

A person who has the faculty of pleasing and influencing others by a fluency of speech and flattery is said to have kissed the Blarney stone. This alludes to the legend that whoever kisses the Blarney stone will be endowed with the ability of saying agreeable things and the gift of obtaining all his desires by persuasive speech and honeyed

words. The stone referred to is a triangular piece of limestone in the castle in the village of Blarney, several miles northward from Cork, Ireland. The present castle, now in ruins, is the third to occupy the site, which is an isolated outcropping of limestone. This site was first occupied by a wooden castle, the hunting post of Dermot McCarthy, one of the kings of South Munster. Another structure was built there about 1200. What is now known as Blarney Castle was erected in the fifteenth century and was originally of great strength, some of the walls being eighteen feet thick. It was long the residence of one branch of the McCarthys, lords of Muskerry, barons of Blarney and earls of Clancarthy. In Queen Elizabeth's reign Blarney Castle was regarded as the strongest fortress in Munster, but in 1646 Lord Broghill took it by treachery and William of Orange later had all its fortifications demolished except the 120-foot donjon tower or keep and a lower and less substantial part of the castle. After the siege of Limerick the McCarthys were dispossessed and the estate was forfeited to the crown because the head of the family adhered to the ill-fated cause of the Stuarts. In 1692 a London company acquired the site of the castle and in 1701 it was sold to Sir James Jeffries, who later became governor of Cork and whose descendants still own the property. The famous Blarney stone is set in the wall of the tower above the top window about twenty feet from the rampart and more than a hundred feet from the ground. It bears the inscription in Latin, now very dim: "Cormach MacCarthy fortis me fierie fecit A.D. 1446." Although the stone is difficult of access, every year hundreds of tourists, prompted by the legend and a spirit of fun, kiss it by ascending the winding stairs to the top of the castle and being suspended by the heels through an opening in the parapet formerly used by the defenders to hurl stones upon assailants below. Those in charge of the castle often play jokes on tourists by having them kiss some other stone. In 1932 an Irish youth, while attempting to kiss the Blarney stone unaided, slipped and fell to his death a hundred feet below. Nobody knows how the stone acquired its reputation for conferring on those who kiss it the faculty of telling white lies with unblushing effrontery. Some suppose that the stone and the legend of its peculiar effect on persons who kiss it were associated long before the castle was built. According to a so-called legend, the stone was at one time the property of the people of Tyre and Carthage, who fully understood its magic qualities. A band of Carthaginian adventurers stole it and attempted to conceal it on the island of Minorca, but they were driven by a storm into the

harbor of Cork and they finally hid it in a wood made famous in 1798 by Richard Alfred Milliken, a Cork attorney, who wrote a song entitled *The Groves of Blarney*, which was adapted to an ancient Irish air differing somewhat from *The Last Rose of Summer*, for which it is often mistaken. When MacCarthy built his castle, according to the legend, he found the stone hidden by the Carthaginians and used it in the walls. The reputation of the stone, it is said, was further enhanced a couple of centuries later when another owner of the castle, MacCarthy Mor, whose title was Lord Clancarthy, after a long siege in 1602 agreed to an armistice with Sir George Carew in which he promised to surrender the castle to the English garrison at Cork upon a date in the near future. Day after day the Englishman waited for the fulfillment of the terms of the armistice, MacCarthy Mor putting him off with one pretext or another. Lord Carew, duped by the artifice, became the laughingstock of Queen Elizabeth's court. Another version of the story has it that MacCarthy Mor was asked to renounce the system by which the clan elected him leader and to take tenure directly from the English crown. The wily Irishman, knowing the consequences of positive refusal and not strong enough to resist by arms, stalled off the demand for several months by promises and eloquent pretexts. Whether the story is true or not, or whether, if true, it suggested the meaning of the term, *blarney*, both as noun and verb, made its appearance the following century and finally established itself in the English language. *Blarney* as a place name is believed to be derived from Irish *blairne*, "little field," which is the diminutive of Gaelic *blair*, "plain." In its modern sense the term did not become common in written language until the latter part of the eighteenth century and the early part of the nineteenth. In the *Journal* of Caroline Fox (1819-1871) we find the following interesting passage: "Madame de Stael was regretting to Lord Castlereagh that there was no word in the English language which answered to their *sentiment*. 'No,' he said, 'there is no English word, but the Irish have one that corresponds exactly,—blarney!'"

Is there a species of flying spider?

So far as known there is no species of the spider family that has true wings and that can "fly" in the generally accepted sense of that term as applied to bats, birds and insects. The flying spider of Australia cannot actually fly, but it is equipped with "parachute sails" and can glide through the air for some distance from an elevation to a lower altitude, in the same manner that the flying

squirrel and the flying snake do. Most so-called flying spiders are merely balloonists—that is, spiders that travel through the air by clinging to pieces of floating web. This ballooning habit is common to the adults of several species and the young (spiderlings) of many others. Under favorable conditions one of these spiders climbs to the top of an elevated object, such as a weed, fence post or tree, raises the tip of the abdomen and emits a continuous fine thread of web toward the direction of the breeze. The web is carried outward and upward by the rising air current. When the web is long enough to support its weight the spider releases itself from its perch and sets out on its aerial float. Entomologists assert that some species of flying spiders have a limited control over their flights by drawing in the filament of the web. The manner in which a spider spins a web between two points that are too far apart for it to jump or swing across is on the same principle. After selecting a starting point and laying a foundation the spider lifts up its abdomen away from the object on which it rests and spins a thread that is carried out by a current of air. This thread strikes and adheres to another object some distance away. The spider then pulls the thread tight and fastens it to the object on which it is resting. Once the space is bridged by a single thread the remainder of the task is comparatively easy. Webs are in this way often stretched between two trees separated by a stream.

Does the sun put out fire?

Literature contains numerous allusions to the common belief that sunshine has a tendency to put out a fire. Atmospheric and other conditions being equal, combustion progresses as rapidly in sunshine as in darkness. Experiments all point to the conclusion that a fire only seems to be dimmer in sunlight because there is then less glow and reflected light from the flame.

What is India ink?

India or *Indian ink* is the name given to a black pigment made chiefly in China and Japan and sold in sticks, rolls or square cakes for use in writing, drawing and painting. It is more correctly called "China ink," having been named in the seventeenth century when it was customary to apply *Indian* to nearly everything Oriental. The original India ink was obtained from the black and deep-brown pigments in certain species of cuttlefish known as *sepia*. In China and Japan India ink is still used in writing with small brushes instead of pens, the sticks or cakes being rubbed down with water. The

modern product consists essentially of a mixture of lampblack, burnt cork or ivory black and some glutinous substance such as gum or gelatin worked into a paste and then baked. In the Orient the exact methods of making India ink were long guarded as valuable trade secrets. Sometimes the more expensive varieties are delicately scented with Borneo camphor and musk.

How long do mosquitoes live?

There are about 1,500 known species of mosquitoes and the duration of life varies considerably. The old belief that the natural life of a mosquito is only one day is without foundation. In no known species of mosquito do the young pass through the larva and pupa stages in less than ten days. Adult mosquitoes live for several months and in some species many of the females hibernate and emerge in the spring to perpetuate the species. Mosquitoes multiply so rapidly that it has been estimated that 160 billion of the insects might spring from a single female in one season. There are insects, however, that hatch and die of old age all within a single day, and that no doubt is the basis of the belief that mosquitoes live only twenty-four hours. The adult life of some May flies is only about six hours. They belong to the class of insects known as *Ephemera*, which means "beginning and ending in one day." The same sun that sees them transformed from the final pupa stage into perfect insects sees them die before it sets. Although their adult lives are so short, their larva and pupa stages may extend over a period of weeks, months or even years.

What is Devil's Isle?

Many erroneously suppose that the entire French penal establishment in South America was on Devil's Isle. This island—*Ile du Diable*—is the most seaward of three small islands known as the *Iles du Salut*, "Safety Islands," lying close together about seven miles off the French Guiana coast. Devil's Isle, St. Joseph and Royale have a total area of only about ten acres. The Safety Islands were only part of the French convict colony and Devil's Isle itself was reserved specially for political offenders. There were never more than a dozen and generally not that many convicts on Devil's Isle at any one time. It became notorious as the place where Captain Alfred Dreyfus was in solitary confinement from 1895 to 1899. Devil's Isle was declared a fortified area and set aside by the French government as the place for the life exile of Dreyfus. Later prisoners on Devil's Isle proper lived in cabins, had their own books and personal effects, managed

a hog farm as a diversion and had a fairly easy existence. Contrary to a common notion, the island, though only six degrees north of the equator, is dominated by groves of lofty coconut trees and is kept comparatively cool and healthful by fresh sea breezes. Most of the French convicts in Guiana were confined on the mainland, only the more desperate being sent to the other two Safety Islands—Royale and St. Joseph. The first French colonists in Guiana, or *Cayenne* as the French usually call it, were traders from Rouen who settled there in 1626. In 1763 the French colonizing company sent out about 12,000 emigrants, most of whom soon perished from tropical diseases and hard work. During the French Revolution Guiana was used as a place of exile for royalists. Two-thirds of a band of exiles sent there in 1797 died a short time later for want of shelter and food. In 1852 the French government began to send convicts to Guiana and in 1854 Napoleon III by decree legalized a plan to make the mainland colony and the near-by islands a huge prison camp. Between 1854 and 1867 more than 18,000 convicts and exiles were landed in Cayenne. Thirty-three years later Guiana was specifically designated the place of banishment of all confirmed criminals sentenced to eight years or more of servitude. Under a system known as *doublage* every prisoner liberated, whether by pardon or by the expiration of his term, was compelled to remain in the colony for a period equivalent to the term for which he was sentenced. This was intended to serve the double purpose of punishing criminals and populating Guiana. In 1927 about 6,000 of the 48,000 inhabitants of French Guiana were classed as penal population. Four years later the French government designated the inland district of the colony a separate administrative unit under the name *Inini*. Because of the demoralizing climate, tropical diseases and wretched economic and social conditions, Cayenne became notorious as the “dry guillotine,” the “green hell” and the pesthole from which few ever returned. As early as 1933 the French government took steps to abolish the penal establishment in Guiana. Finally in 1946 it was ordered liquidated and provision was made for the pardon or the removal to France of all remaining prisoners.

Do fish drink water?

Fish drink little if any water. Many people suppose that the constant and regular opening and closing of a fish's mouth indicates that it is drinking, and hence we have to *drink like a fish* and *dry as a fish*, which are based on a misconception. A fish opens and

closes its mouth to pass water through the gills to obtain oxygen. The action is part of the breathing operation. Apparently enough moisture is taken into the system of a fish in its food and through its skin to supply it with virtually all the water it requires. During the process of breathing the gullet of a fish is constricted so tightly behind the last pair of pharyngeal clefts that very little if any water passes into the stomach. "This closing of the gullet," asserts J. R. Norman, British ichthyologist, "is brought about by the action of special muscles encircling the throat, which function in exactly the same way as does a double string running around the neck of a bag. The pressure of any food against the closed gullet, however, causes these muscles to relax somewhat, and the solid nourishment is pressed down into the stomach without the entrance of any water."

Do fish shed their skins?

At least one species of fish is known to shed its skin like a snake. It is a horsefish, *Agriopus*, a curious species indigenous to South Africa. The brightly colored new outer skin of this species develops under the old one, which is cast off in patches. In ordinary fish the epidermis is worn away and replaced gradually as in most other creatures.

Where was the original home of the gypsies?

The basic part of the language of the gypsies is believed to be the nearest living relative of ancient Sanskrit and is taken to be strong circumstantial evidence that the gypsies originally came from somewhere in India. Some of their physical characteristics as well as their customs also point to an Indian origin. Although the gypsy tongue appears to be derived from an Indic language, and the people who speak it are generally regarded as the descendants of the remnant of an obscure Indic tribe, the origin of the gypsies is an unsolved ethnological riddle. In the Balkans and surrounding regions they are called *Tziganes* in various forms, a term that some authorities derive from Greek *Athinganoi*, "touch me not," suggesting a connection between this name and the presumed fact that the gypsies were once untouchables in India. The language spoken by modern gypsies is interlarded with words and inflections borrowed from Greek, Slavic, Rumanian, Magyar, Spanish, German, English, French—in fact all the languages of the peoples among whom they have lived at length. Gypsies do not have a peculiar religion. They are Christians, Moslems or what not, being influenced somewhat by the prevailing religion of the country

where they have long resided. In America the majority of them profess to be affiliated with the Eastern Orthodox Church, indicating a former sojourn in southwestern Europe. When bands of these swarthy, dark-haired nomads—without a history, a literature, a written language or a recognizable religion—first found their way into western Europe by way of the Balkans in the fifteenth century they said that they had come from a country called “Little Egypt,” which various writers have identified with Egypt, Armenia and Greece. The erroneous supposition that they came from Egypt caused them to be called by some “Pharaoh’s people” and by others “Egyptians,” which in English was first corrupted into *Gypcians* and then *Gypsies*. Even before the arrival of gypsies in the British Isles early in the sixteenth century the English had been in the habit of referring to as Egyptians any people who were given to magic, witchcraft, fortunetelling and similar occult practices. Othello, speaking of the handkerchief that played an important part in the plot of the tragedy, says: “That handkerchief did an Egyptian to my mother give; she was a charmer, and could almost read the thoughts of people.” In *Antony and Cleopatra* Shakespeare has an Egyptian soothsayer tell the fortunes of the queen’s courtiers by means of palmistry, and in the opening speech and elsewhere in the same play the dramatist refers to Cleopatra herself as a *gipsy*. The association of magicians, soothsayers and the interpreters of dreams with the Egyptians was undoubtedly of Biblical origin. When Pharaoh had his dreams of the lean kine and the thin ears of corn “he sent and called for all the magicians of Egypt” and asked for an interpretation. There are many similar references in the Old Testament. Gypsies usually do not refer to themselves as gypsies. *Romany*, from their word for “man,” is the name they apply to themselves. *The Romany Rye* (1857) is the title of a book by George Borrow and in the gypsy language literally means “The Gypsy Gentleman.” *Gyp*, an American slang word used as a verb meaning to swindle or cheat and as a noun for a sharper or crook, is undoubtedly a corruption of *gypsy*, for it was first employed especially in connection with horse trading, a business at which the gypsies were adept. At Cambridge and Durham a person who acts as valet or servant to college students is called a *gyp*, which is very likely from the same source, inasmuch as the gyps were originally mere hangers-on who lived on tips. Its derivation from *gippo*, an obsolete word for varlet or scullion, is farfetched and is not very convincing, and the theory that it is from Greek *gyphs*, “vulture,” is entirely unsupported by etymological evidence. The popular spelling of the name disguises the fact that *gipsy* is derived from *Egyptian*.

Gipsy is generally preferred in British and *gypsy* in American usage, although F. W. Fowler says in *A Dictionary of Modern English Usage* that the *i* has been substituted for *y* in the word "for no better reason than that the display of two *y*'s is thought an excessive indulgence in ornament." Small numbers of gypsies had already begun to migrate to America from Britain, Holland, Germany and France in Colonial times. A few remained in America after being impressed into the British service and transported to the United States during the Revolution. Most American gypsies immigrated from Hungary, Rumania and Spain after 1880. It is estimated that in 1940 there were about 100,000 gypsies in the United States. Although the majority of gypsies live in Europe and Asia, they are found in nearly every country and nobody has any idea how many of them there are in the world. The number has been estimated as high as five million. Many of them recognize a loose "tribal" connection and have "kings" and "queens." They have mixed somewhat with the peoples among whom they have resided and the "gypsy blood" is probably not so pure as is generally supposed, although they have succeeded remarkably in maintaining their identity as a peculiar people both physically and culturally. In many European countries the gypsies have been charged with all sorts of fantastic crimes and frequently have been the subjects of discrimination and persecution. Nazi Germany and her satellite states pronounced them a menace to public health, forbade their wanderings, segregated them in schools, forbade them to intermarry with other races, subjected them to Nazi racial regulations in general and even threatened them with sterilization as a people.

Is food cooked in aluminum utensils injurious to health?

The question whether food cooked in aluminum ware is injurious to health was raised soon after cooking utensils were first made of aluminum in 1892 and has never been put completely to rest. Cooking vessels of other metals were also questioned at one time on the ground that they were a menace to health. More than two centuries ago Dr. Girtanner of Göttingen predicted that the time would come when "kitchen utensils will be made of silver, and even of gold, which will contribute more than anything else to prolong life, poisoned at present by the oxides of copper, lead and iron, which we daily swallow with our food." There appears to be no positive evidence that food cooked in aluminum vessels is more injurious to health than food cooked in utensils of iron and copper. The United States Public Health Service, the American Medical Association and several other medical and

health organizations have expressed the opinion that aluminum is not harmful in the minute quantities taken into the stomach with food cooked in aluminum ware. Foods cooked in aluminum vessels, like foods cooked in vessels of iron or copper, undoubtedly dissolve small quantities of the metal. If pure water is boiled in an aluminum kettle for half an hour and then is allowed to stand a sediment is formed. Many people accept this as evidence that the chemical activity of aluminum is very great. As a matter of fact the experiment is no indication that aluminum is particularly soluble, unless the water is absolutely soft, which is very seldom the case. Mineral compounds in hard water are held in solution by carbonic acid. When the water is boiled the carbonic acid escapes and the minerals precipitate and form the sediment. It is this same process that causes the formation of scale in teakettles and it is independent of the material of which the utensil is composed. A trace of aluminum may dissolve from a freshly scoured utensil and appear in the form of aluminum hydroxide or some other aluminum compound. But it has not been established that these compounds are deleterious to the health. Numerous experiments tend to prove that aluminum salts and other aluminum compounds in food do not pass through the walls of the stomach or into the blood. It appears that the body absorbs very little aluminum taken into the stomach with foods cooked in aluminum utensils. Aluminum, like iron, copper, tin and other metals used in cooking utensils, is slightly poisonous when injected directly into the blood, and it is probable that large quantities of aluminum salts would be injurious to health. Apparently all aluminum taken into the body is carried off with the feces except under unusual circumstances. None of the metal was found in the organs of animals used in experiments. In the ordinary process of cooking the metal does not seem to be attacked sufficiently by food acids to produce an objectionable amount of soluble salts. Delicate chemical tests are necessary to detect the presence of aluminum even in the juices of acid fruits and vegetables cooked for several hours in aluminum utensils. It should be borne in mind that aluminum regularly occurs in most of our common foods and frequently is present in drinking water. The quantities picked up from aluminum cooking vessels is small compared to that in foods. The common statement that there is a direct relation between cooking in aluminum utensils and the prevalence of cancer is also rejected by the United States Public Health Service as being without proof. "Aluminum," asserted that federal agency in a letter to the author, "is considered a metal of low toxicity, and we are not acquainted with

trustworthy data which indicate that any disease bears a relation to the use of cooking utensils. It may be safely said that at the present time the overwhelming weight of evidence and testimony supports the conclusion that health is not adversely affected by eating food cooked in aluminum-ware."

Do beavers use their tails as trowels?

There is no foundation in fact for the popular belief that the beaver, proverbial for its industry, ingenuity and engineering skill, uses its naked, flat paddlelike tail as a trowel in mixing mud with other materials to build dams, canals, houses and tunnels. In all these operations the beaver employs its front feet and mouth. Mud, stones and similar materials obtained from the bottom and sides of streams and ponds are carried through the water between the forefeet held snugly against the breast. Sticks and poles, after being cut in proper lengths with the teeth, are carried in the mouth. The forepaws, not the trowellike tail, are used in patting down the mud and other mortarlike substances. The long, broad, flat tail is beaten against the water as a signal of alarm and it serves the double purpose of rudder and propeller in swimming.

What bird has claws on its wings?

The fledglings of the hoatzin (pronounced *ho-AT-sin*), a peculiar species of bird native to tropical South America, have a pair of well-developed claws on each wing and they climb among the branches of the trees like a quadruped, using the claws as hands or fingers with which to grasp twigs or other objects accessible. The adult hoatzin—the name is native to South America and is sometimes spelled *hoactzin* and *hoazin*—is a long-tailed, crested bird which appears to be as large as a small pheasant but which is actually much smaller. It lives in the dense growths along streams and around lakes in Brazil, the Guianas, Venezuela, Colombia, Ecuador, Peru and Bolivia. It feeds in small bands on various plants and builds a nest of loose sticks in trees and shrubs in the vicinity where other birds of the same species are nesting. The young are hatched naked and they soon leave the nest and scramble among the branches by means of their feet proper, the claws on their wings and the bill. These wing claws are regarded by scientists as survivals of the most primitive method of progression among birds. The archaeopteryx, the earliest fossil bird ever found, apparently used its anterior digits or "fingers" in much the same way as the young hoatzin does. Generally, it may be said that the two claws on each

wing are homologous to the thumb and forefinger on the human hand. What is strangest of all about these birds is the fact that the fledgling sheds its claws only a few days after it begins to use them. So different is the hoatzin in structure that scientists had great difficulty in classifying it. It was finally designated the sole species in the genus *Opisthocomos*, which may be regarded tentatively as a suborder of the pheasant family. Although not primarily a water bird, it can swim. In British Guiana this species is known as the stinkbird or the stinking pheasant, because it feeds largely on a kind of arum, which gives the bird a disagreeable musky odor. The hoatzin is also peculiar in that the eyelashes are set in a bare space around the eye.

How can certain insects walk on water?

Certain insects known as water skaters, skippers or striders move about on water as freely as other insects move on hard surfaces. It is the "surface film" that provides the resisting surface necessary to support the weight of the water skaters. The surface of a liquid acts very much as if it were covered with an elastic film like a thin rubber membrane. When two floating objects come near enough to each other they are suddenly drawn together as if by a magnet. The surface of a liquid is constantly striving to reduce its exposed area to a minimum and the objects are thrown together by the surface tension. Each object stretches the surface film and forms what might be described as a dimple. When the floating objects approach each other closely the two dimples coalesce and the objects are thrown together. An ordinary sewing needle, if thoroughly dry, will float when laid carefully on the surface of water in a basin, notwithstanding that the density of the steel is about eight times greater than that of water. A thin aluminum disk will act in a similar manner. The needle bears down the surface of the water, yet does not break through it, because the weight of the needle is not so great as the force exerted upon it by the tendency of the depressed liquid surface to straighten out. If the needle is wet it will sink, because the water will rise around it instead of being depressed by it. On the other hand, if the needle is first dipped in oil it will float more readily. Grease prevents water from wetting a needle much as oil prevents the feathers of a duck from getting wet. The feet and legs of insects that travel on water are covered thickly with minute hairs that retain a filling of air. This air depresses the so-called surface film and acts like a coating of oil over which the water does not flow because the film is not broken. An insect with smooth legs and feet would puncture the film and be helpless on

the surface of water. Only comparatively small creatures whose weight alone is not sufficient to rupture the surface film can be supported by this means. The common water skater slides on its front and hind legs and pushes with the middle pair. When the insect is at rest only the middle and hind legs touch the water. Some spiders and a number of other creatures also are able to travel on water. The crested basilisk, a tropical American lizard, is popularly known as the "Jesus Cristo lizard" because it can run on water. It is not web footed and will sink if it stops, but it is able to run over the water by the rapid motion of its feet and the support of its long slender tail.

Is every day observed as the Sabbath by some religion?

It is often said that every day of the week is set aside as the Sabbath or holy day of some religion or people. Strictly speaking, this does not appear to be the case. Friday is observed by the majority of Moslems; Saturday by the Jews, Seventh-Day Adventists, Seventh-Day Baptists and several other small Christian sects; Sunday by the majority of Christians; and Tuesday by the sect of Moslems predominant in Iran (Persia). But there are no religions or sects at the present time, so far as the author is able to learn, which, according to our calendar, observe Monday, Wednesday or Thursday as the Sabbath. Even a considerable part of the Moslem world, particularly that part in Turkey, has abandoned Friday in favor of Sunday. Many years ago some writer composed the following rhyme:

Christians worship God on *Sunday*,
Grecian zealots hallow *Monday*,
Tuesday Persians spend in prayer,
Assyrians *Wednesday* revere,
Egyptians *Thursday*, *Friday* Turks,
On *Saturday* no Hebrew works.

Later writers, taking this rhyme as fact, made the broad statement that every day in the week is set apart by some people as their Sabbath or holy day, and they enumerated the holy days and the peoples as follows: Sunday is observed by most Christians; Monday by Greeks; Tuesday by the Persians; Wednesday by the Assyrians; Thursday by the Egyptians; Friday by the Mohammedans, and Saturday by the Jews. This is a curious hodgepodge of fact and fiction. The enumeration is absurd, because the Egyptians, Greeks and Assyrians (whoever they may be) are nearly all members of Christian or Mohammedan sects. Evidently certain ancient religions now obsolete were included to

prove the point about the perpetual Sabbath. Nevertheless the assertion about each day of the week being the Sabbath of one religion or another is still often repeated. Perhaps a better case for the so-called perpetual Sabbath could be made if different calendars and systems of reckoning time were used.

What do parallel black lines on envelopes signify?

A series of parallel black lines are required by the United States Post Office Department on what are known as business reply envelopes. The short horizontal black marks are to call the attention of the various postal officials to the fact that the mail is not to be delivered until the addressee has paid the postage. An extra charge is made on such mail. When business reply envelopes or cards reach a post office they are stamped with postage-due stamps and not delivered until the addressee has paid for the stamps. Business reply envelopes and cards, according to the Postal Laws and Regulations, must be furnished by the user without cost to the Post Office Department and must bear on the address side the printed name and address of the person or firm to whom they are to be returned, together with the permit number and such other information as may be required.

Does "mummy wheat" ever grow?

The indestructibility of truth is often compared to grains of wheat that have lain for thousands of years in Egyptian tombs with mummies. Every now and then somebody announces a new variety of grain alleged to have been developed from seed taken from ancient tombs. In 1944 a report said that peas from the 3,300-year-old tomb of King Tutankhamen had grown in Florida and produced a new variety of peas. Publication of such stories is sometimes preceded by an attempt to sell seeds. Delayed germination in seeds has been investigated by many scientists and they are unanimous in reporting that there is no evidence that "mummy wheat" has ever germinated. It is doubtful whether there has been any case in which wheat, oats, barley or other small grain has germinated after the lapse of more than twenty-five years. The seeds of some plants retain their viability for long periods when kept dry and have been known to sprout after many years. The viability period varies widely with different species. With some it is only a season or two under the most favorable conditions. As a general rule the seeds of domestic or cultivated plants do not retain their viability so long as do those of weeds or wild plants. The extreme viability period of wheat is believed to be under twenty years. The

United States Department of Agriculture reported it does not know of any authentic records of the germination of wheat or other common grain after hundreds or thousands of years. There is some evidence to indicate that the viability period of lotus seeds may be considerably greater than 150 years. In 1906 a French botanist named Becquerel selected a number of seeds from a museum collection and planted them. These seeds ranged in age from 30 to 150 years, the ages being well established. Not a seed of the cereals germinated, although some of the legumes did, which proved that the conditions were favorable for the retention of vitality and for germination. In the same year an Australian botanist named Alfred J. Ewart made a series of experiments to determine the longevity or the viability of various seeds. Some of the seeds he used had been in a dry, dark, airy cupboard for fifty years. When placed in soil under ideal conditions not a single grain of wheat more than sixteen years old germinated. Ewart estimated that the probable extreme duration of vitality for any known seed may be set "between 150 and 250 years" for the legume family; and "between 50 and 150 years" for the mallow and lotus families. In 1942 it was reported that lotus seeds that had lain dry and dormant since 1750 sprouted after the British Natural History Museum was bombed by the Germans, and in 1939 seeds of the Oriental pink lotus that had been found in an ancient lake bed and "believed to be 300 to 500 years old" sprouted in the Field Museum in Chicago. In 1902 the United States Department of Agriculture buried seeds of 107 species in pots of soil at Arlington Farms at depths of eight, twenty-two and forty-two inches. At intervals these seeds were dug up and planted to see if they would grow. After thirty years some seeds of thirty-five species germinated. Among them were tobacco, clover, celery and many weeds. Even after thirty-nine years some tobacco, bluegrass, celery, pokeweed, black nightshade, jimson and Scotch thistle seeds germinated. But wheat, barley, corn, buckwheat, flax, cotton and oats were not among those that germinated after thirty years. The trouble with "mummy wheat" is that often it is not "mummy wheat." There is considerable opportunity for mistake or fraud as to the age of the grain. Gaston Maspero, a French Egyptologist who spent many years among the ancient tombs, wrote: "After repeated and always negative trials, we have arrived at so firm a conviction of the complete death of these grains found in the tombs that now when we find seeds we do not renew our tests of them. It happens sometimes that the seeds, especially of wheat and barley, sold to tourists by the fellahs and sellers of antiques do germinate, but the fellahs do not have any scruples against

mixing fresh or viable seed with that found in the tombs. Not a single seed that we ourselves have picked up in the ancient tombs has ever germinated." The keeper of Egyptian antiquities at the British Museum was equally emphatic in saying that the wheat that grows is not ancient Egyptian wheat. He said the halls of rock tombs are often used as dry and secure places for storing grain and this accounts for some of the modern seeds in the ancient tombs. Sometimes wheat straw is used as temporary packing for mummies and a few seeds are scattered in the ancient tombs by this means. Dr. C. Stuart Gager, American botanist, wrote: "In other experiments, carried on with great care, it has been conclusively proved that of several hundred wheat grains stored under the best conditions only eight percent would germinate at the end of 16 years, and that at the end of 35 years not a single seed would germinate. Microscopic examination also showed beyond the shadow of a doubt that the embryos of these seeds were dead." Dr. Louis H. Pammel, a botanist at Iowa State College, reported: "We have made investigations of seeds of wheat, corn and oats that were on exhibition at the Centennial Exposition in Philadelphia in 1876 and not a single seed germinated after the lapse of 20 years. A great deal of work has been done on delayed germination in this country and in Europe by such scientists as Dr. Candolle, Arthur, Crocker, Becquerel, Darwin, Noble, Duvel, Goss, Ewart, Miss C. M. King, and Haberlandt. This work shows conclusively that the story about mummy wheat germinating is all a myth."

What are frozen assets?

Frozen assets is the term applied to property or investments that cannot be quickly turned into cash because of depressed business or other conditions. Banks, for instance, often have assets that are perfectly sound but that, because of a slump in business, could not be liquidated immediately without great loss. Such assets are said to be frozen. The term is also applied to funds that are tied up by government decree. On June 14, 1941, President Franklin D. Roosevelt issued an executive order freezing the assets in the United States of various European governments. *Frozen assets* is the opposite of *liquid assets*.

How can a person blow both hot and cold?

A person who shifts from one side of a subject to another or who is deliberately inconsistent with a view of deceiving is said to "blow hot and cold." The figure of speech has a basis in both fact and fancy. If

a person blows forcefully upon his hand with lips nearly closed the effect is decidedly cooling; but if he blows gently with the mouth open the effect is decidedly warming. Moisture in the skin is responsible for this difference in effect. Heat, like time, is measured by its loss. In the first case, the breath is expelled so rapidly that it cools the skin by evaporating the moisture, while in the second case, the skin comes in contact with the warm air without losing much of its moisture. If a person blows upon a thermometer instead of the skin the effect in both cases is the same, or rather reversed, because the instrument registers only the actual temperature. The cooling effect of an electric fan is due to the fact that each puff of air absorbs heat and moisture as it passes over the skin. In reality the fan raises the temperature of a room by setting the air in rapid motion. The collection of fables attributed to Aesop contains one on the subject of blowing hot and cold. A man who lost his way in the woods on a winter night was invited to take shelter and food in the cell of a satyr. The stranger, as he entered the cell, held his hands near his mouth and blew on them. Upon being asked by the satyr why he did this, he replied: "My hands are cold and my breath warms them." Later when a dish of hot porridge was placed before him the man raised a spoonful of it to his mouth and blew upon it. Again the satyr demanded an explanation. "The porridge is hot," replied the guest, "and my breath cools it." This was too much for the host. "Get out," exclaimed the satyr, "I will have nothing to do with a man who blows hot and cold with the same breath." This fable is the source of our common saying about blowing hot and cold.

Is head-hunting still practiced?

The practice of taking enemy heads as trophies and evidences of prowess was once widespread and is not yet completely extinct. Head-hunting was once a characteristic of many Malayan and Melanesian tribes and there are survivals of it in New Guinea, Borneo, Burma, Assam, Formosa and elsewhere. In 1935 a hundred human heads were found in the huts of natives on the Assam-Burma border. The Tagalogs of eastern Mindanao in the Philippines were occasional head-hunters within historic times. The head-hunting Taiyal tribes of northeastern Formosa (Taiwan) were at one time a serious menace to the Japanese and Chinese settlers. Their territory in the mountain fastnesses was inclosed by a 360-mile guard line, much of which was electrified. In Borneo the head-hunting propensities of the Dyaks, most famous of all head-hunters, were not suppressed until a generation ago. The original

"wild man of Borneo" is supposed to have been a Dyak. Among the Dyaks head-hunting was not practiced for the mere lust of killing. Their religion required a man to take a head when he married, and the heads of enemies were necessary for the proper celebration of the harvest. The manhood of a youth could not be recognized until he had an enemy head to his credit. Women preferred men who had taken enemy heads and the motive was to please the women. Like many other Malayan head-hunters, the Dyaks believed that every head acquired meant another slave in the next world. Head-hunting was once common even in Europe. The exhibition of the heads of kings and generals as trophies above the gates of fortified cities and castle battlements during the Middle Ages was a survival of this practice. The fourteenth edition of the *Encyclopaedia Britannica* (1929) said on this subject: "In Europe the actual survival of the practice is probably limited to the Balkan peninsula. . . . Here the complete head was taken by Montenegrins at any rate as lately as 1912, the head being carried by the lock of hair worn apparently for that purpose. In the Balkan war of 1912-13, nose-taking was substituted, and it was the practice to cut off the nose and upper lip, with the moustache, by which it was carried, instead of the whole head, just as in Kafiristan and in Assam an ear is sometimes carried off instead of the whole head." Some of the North American Indians were head-takers until the introduction of the white man's steel knife made scalping more convenient. The Jivaros, some 15,000 or 20,000 natives living at the eastern base of the Andes in Ecuador and Peru, shrink the heads of their enemies. These shrunken heads, called *tsantsas* in the native tongue, are often seen in museums. At one time the demand for *tsantsas* by museums and collectors became so great that the Jivaros began to kill their neighbors wholesale and the governments of Ecuador and Peru had to step in and put a stop to traffic in these gruesome souvenirs. In 1936 a scientist reported that these head-hunters were engaging in the racket of cutting off the heads of persons who died naturally and palming them off to scientists and tourists as the genuine article. It is said that a red-haired white man once went into the Jivaran jungles in quest of one of these trophies. Months after he set out the natives delivered a head to his agents on the coast, but the head bore a suit of red hair and the adventurer was never heard of again. The Jivaran remove the skin from the skull, dip it in a vegetable extract to dye it and then sew it up along the back of the neck to restore it to its original form. The head is shrunk and cured by filling and refilling it with hot sand. During this process, accom-

panied by considerable religious ceremony, the head gradually becomes smaller until it is no larger than a man's fist. The shrinking is done so expertly that the features retain their proportionate size and original expression. Long cotton cords are used to sew shut the lips in various patterns. These same Indians also sometimes shrink the entire bodies of dead chiefs until they are no larger than medium-sized dolls. A war with another tribe is held to be a failure unless a goodly batch of enemy heads is brought back. Head-hunting as a rule is conducted by tribal groups who make raids on other jungle tribes for the sole purpose of getting heads. According to the Jivaran concept, a living man with the head of an enemy in his possession can make the depossessed soul obey his orders, and by this means the Jivaros hope to keep control over the spirits of the dead in the next world. When a warrior has taken a head he has the privilege of presiding over and celebrating a religious rite, the mystery feast of the tribe, and this feast opens the road to greater fame and honor, more material wealth, additional victories over foes and a long and happy life.

How did *magnolia* originate?

Certain North American and Asiatic flowering trees and shrubs were given the generic name *magnolia* by the Swedish botanist Linnaeus, who fashioned the word on the Latin model from the surname of Pierre Magnol (1638-1715), professor of medicine and prefect of the botanic garden at Montpellier in France, who had devoted considerable study to the ancient family of plants to which the magnolias belong. Literally the word signifies "high-souled." Early botanists who visited the southern part of the United States were struck by the great variety of magnolias, with their creamy white and fragrant blossoms and large, glossy green, smoothly contoured leaves that often remain on the trees throughout the year. The magnolia is the state flower of both Mississippi and Louisiana. Popularly magnolias are sometimes called "wild cucumbers" from the scarlet, cucumberlike seeds borne by trees of this family.

How did Halloween originate?

Halloween, now the preferred way of writing the word, is merely a shortened form of *All Hallows' Even*, that is, October 31, the evening before All Hallows' Day or All Saints' Day, November 1. In 609 A.D. Pope Boniface IV dedicated the Pantheon in Rome to the Blessed Virgin and all the martyrs. The festival of the anniversary of the conversion of the pagan temple into a place of Christian worship was

observed May 13 as the Peace of the Martyrs. Pope Gregory III in the eighth century dedicated a chapel in the Vatican basilica to all saints, known and unknown, and designated November 1 as their festival. In 837 Pope Gregory IV extended its observance to the whole church and All Saints' Day supplanted the Peace of the Martyrs. The festival supplied any deficiencies in the annual calendar of saints' feasts. It is often said that Halloween antedates Christianity. That is true only in the sense that certain pagan customs not related to the Christian religion were grafted on the vigil of All Hallows' Day. In southern Europe Halloween apparently absorbed some of the customs formerly associated with the festival of Pomona, the Roman harvest feast, which came about the first of November. This probably accounts for the popular association of corn, apples, pumpkins, nuts and other autumn products with Halloween. During the Middle Ages there seems to have been a widespread belief that the souls of the departed revisited their former homes on earth on Halloween to warm themselves by fires and to partake of good cheer provided for them by their kinfolk and friends. In countries predominantly Catholic in faith Halloween is still associated with the dead, and graves are decorated with flowers on All Saints' Day, which is a national holiday in France and some other Latin countries. Only in the United States, Scotland, northern (but not southern) England and a few other countries is Halloween a time for revelry, wearing masks and playing boyish pranks and practical jokes upon unsuspecting neighbors. The ancient Celts in northwestern Europe and the British Isles bisected the year and celebrated the beginning of summer about May 1 and the beginning of winter about November 1. Thus among them the evening preceding these days corresponded to our New Year's Eve, a time of revelry. Walpurgis Night, the eve of the first of May, is still observed in parts of rural Germany somewhat as we observe Halloween. Some of the practices associated with May Day are probably traceable to the observance of May 1 as the beginning of summer and the half-year by the Celts. In northern countries Halloween was characterized centuries ago by fire festivals and the lighting of bonfires on hills, and the belief that on this night of all nights spirits, fairies, hobgoblins and witches came forth and frolicked. It was regarded as an unhallowed time, when supernatural influences prevailed. In Scotland, Wales and northern England it was the night selected for divinations. It is probable that these features of Halloween were derived from the practices of the druids, the Celtic pagan priests of Gaul and Britain, who feasted and made merry on "half-New Year's eve." Our pumpkin lanterns and

masks may represent the witches and hobgoblins associated with these pagan celebrations. Probably the ringing of bells and the making of loud noises were in the dim past intended for the benefit of wandering spirits. In the mountains of Scotland and Wales the custom of lighting huge fires on the hills on Halloween survived until a generation or two ago. The Irish sometimes call Halloween *Oidhche Shamhna*, Gaelic for "Shamhna's vigil," in allusion to the druidic god of death who was supposed to call together all wicked souls once a year.

Can underground water be located with a witching stick?

There is no known scientific basis for the popular belief that underground water, oil, minerals or hidden treasure can be located by means of a Y-shaped twig carried over the surface in a certain manner. The belief is probably a survival of ancient wand magic and other methods of divination. Early in the fifteenth century miners in the Harz Mountains of Germany prospected with witch-hazel twigs, and this practice, introduced among the Cornwall miners in Queen Elizabeth's time, was later adopted for finding water. In *De re metallica* (1556), Georg Agricola, German physician, scientist and "father of mineralogy," wrote: "A miner should be good and serious and should not make use of an enchanted twig. If he is prudent and skilled, he should follow the natural indications that he can see and dig." The divining rod should not be confused with modern methods of prospecting with instruments based on gravitational, magnetic, seismic, electrical, radioactive, geothermic and other known scientific principles. Water witches often are more or less illiterate persons who maintain that they have a special gift for finding water with the witching stick, dowser, divining rod or doodlebug, as it is variously called. Some of them even claim to have a primitive "race instinct" that other persons have lost. Occasionally a water diviner is so proficient that even scientific observers are impressed and testify to his remarkable powers. Some years ago a scientist suggested that the dowser may be equipped with an extraordinarily sensitive nervous system that behaves much like a radio set, the hands of the diviner being the poles of the magnet, his legs the "ground" and the wand the antennae. As a rule, however, water witches do not profess to use scientific methods. Some of them go so far as to say that the gift of finding water with a crotched stick is peculiar to persons born under certain signs of the zodiac. Generally they insist on using a twig of witch hazel, willow, ash, peach or elder, although occasionally a piece of looped metal such as wire is used instead. The diviner holds the two prongs of the twig in his hands

according to definite rules and walks over the ground slowly. When he walks over underground water the point of the Y-shaped twig bends toward the ground without any volition on the part of the operator. Water witches often say that the mysterious pull upon the twig is so great at times that those parts held in the hand will break if held too firmly. The United States Bureau of Mines investigated the subject and concluded that the so-called divining rod is not rational or scientific and is not based on any physical principles that are understood or even known. "That is to say," asserted the bureau in its report, "the divining rod is either a fraud (whether deliberate or unintentional) or is based on some physiological principles of which at present we know little or nothing—like the sense of direction in migrating birds and fishes." Water witches almost invariably fail when they attempt to exercise their art under conditions satisfactory to scientists. If occasionally they are successful in locating water in a higher percentage of the tests than can be accounted for by mere chance, it is not, in all probability, because of any mysterious power acting upon the crotched stick but because the person holding it is a quick observer and has had considerable experience in finding water. The chacma or "pig-faced baboon" of South Africa is reputed to possess remarkable instinctive powers for locating water. In arid regions, it is said, the natives deprive captive chacmas of water for several days and give them salty food to make them extremely thirsty. When the leashed ape is released it sniffs the air, notes the direction of the wind, smells the roots of grass and apparently seeks other sources of inspiration unknown to human beings, after which it unerringly proceeds to a stream or water hole.

Where are the Mountains of the Moon?

The Mountains of the Moon was the name given by the ancient Greeks in Aristotle's time to a supposed range of mountains in the interior of Africa. Apparently the Greeks got their knowledge of these mountains from the Egyptians, who in turn learned of them from the wild tribes with whom they came in contact. Ptolemy, the Alexandrian geographer, astronomer and mathematician of the second century A.D., supposed, as did Marinus of Tyre before him, that the Mountains of the Moon (*Montes Lunae*) contained the headsprings of the Nile. Captain John H. Speke, the English explorer, who discovered the source of the Nile in 1861, considered the crescent of mountains explored by him north of Lake Tanganyika to be part of the Mountains of the Moon, while Dr. Charles T. Beke, an English geographer who devoted considerable study to the Nile and its tributaries, applied

the ancient name to an extension of the Ethiopian plateau near the source of the Blue Nile. Previously to the days of Speke and Beke the Mountains of the Moon were vaguely indicated on maps as being in Equatorial Africa. In 1889 Sir Henry Stanley reported that he had discovered the real Mountains of the Moon, but his claim was scoffed at by most European geographers. Referring to Stanley's map, Sidney Low wrote in the *Cornhill Magazine* in 1904: "After that we are directed, by certain dots, along the supposed course of the stream northward, to where it is imagined to take its rise in the *Montes Lunae*, for which the map-maker can do no better for us than to refer, in brackets, to *Ptolemy* and *Abulfed Edrisi*." Even at the present time there is a difference of opinion as to what particular range is entitled to the classical and legendary appellation, and for that reason the *Mountains of the Moon* is generally omitted from modern maps of Africa. Sometimes the name is applied to the group of peaks around Mount Kenya in British East Africa, but more often to the Ruwenzori range, lying farther west and just north of the equator between Lake Edward and Lake Albert on the border of the Belgian Congo. These mountains are comparatively inaccessible and are interesting because, being virtually on the equator, they are snowclad and always cloaked in a heavy mist. In 1906 the Duke of Abruzzi, an Italian explorer, headed an expedition into Equatorial Africa that ascended the principal peaks of the Ruwenzoris.

Why is the dollar so called?

Dollar is derived in a roundabout way from German *Thal*, "dale" or "valley." In the sixteenth century the Count of Schlick established a mint at Joachimsthal (literally "the dale of Joachim") a small silver-mining town in Bohemia northwest of Prague. About 1519 this mint began to issue silver coins bearing the image of St. Joachim (Joseph, the husband of the Virgin Mary), patron saint of the town of Joachimsthal, which is called *Jachymov* in modern Czech. This coin, which had about the same value as the Spanish peso or "piece of eight," circulated generally in the Germanic states and was popularly known as *Joachimsthaler*, which in time was shortened to *Thaler*. In Low German and Dutch, *Thaler* became *daler*, which in English became *daller*, *dallor* and finally *dollar*. Apparently the thaler or dollar was the monetary unit of Scandinavia in Shakespeare's time, for in *Macbeth*, written about 1605, the dramatist makes the Thane of Ross say that the Scots would not deign the Norwegian king "burial of his men till he disbursed at Saint Colme's inch *ten thousand dollars* to our general

use." The term was often used in the day of Shakespeare. In *Measure for Measure* we find the phrase "three thousand dollars a year" and in *The Tempest* "a dollar," in each instance the word being used in connection with a pun on *dolour* or *dolours*. During the seventeenth and eighteenth centuries *dollar* became the common English name for the Spanish peso. Long before the American Revolution the West Indies trade had familiarized the American colonists with the Spanish dollar. Several of the states issued their paper currency in denominations of dollars as well as pounds a year or two before the Revolutionary War ended. In 1782 Gouverneur Morris, assistant to Superintendent of Public Finance Robert Morris under the Articles of Confederation, prepared an elaborate report on coinage in which he suggested the decimal system and the terms *dollar* and *cent*. This plan, with a few modifications by Thomas Jefferson, was adopted by Congress July 6, 1785, and became the basis of the American monetary system. According to the Morris plan, all new coins "should be in decimal proportions to one another" and the unit should be "the 1440th part of a dollar." This unit, declared Morris, would measure all old currencies "without leaving a fraction." Jefferson approved the decimal system for the new money but asserted that the proposed unit, while perfect in theory, was too complicated and small. He was a strong anti-Britisher and wanted to get as far away as possible from the English pound. In 1782 he wrote that the unit should be the Spanish dollar, "a known coin, and the most familiar of all to the minds of the people." This coin, he added, "is already adopted from South to North, has identified our currency, and therefore happily offers itself as a unit already introduced." No metal dollars were actually coined until 1794, during Washington's second administration and two years after passage of the law establishing the mint and fixing the value of the dollar as the monetary unit. It is not uncommon for one country to borrow from another the name of its monetary unit and other countries followed the United States in adopting the *dollar*, although the value of the coin so described varies considerably. After the German Empire was formed in 1870 the thaler was abandoned for the mark.

May one be a Catholic and a Mason at the same time?

Since 1738 Catholics have been forbidden, under penalty of excommunication, to enter societies of Freemasons or in any way to promote such organizations. In the year Clement XII made the first papal pronouncement against Freemasonry, condemning the order largely on the grounds that its members were bound by oath not to

disclose its purposes or practices to either civil or ecclesiastical authorities and that its teachings consisted essentially of naturalism and consequently were opposed to all forms of supernaturalism. Freemasonry has been condemned by many popes since the time of Clement XII. The Catholic objections to the order are clearly and concisely stated in *The New Catholic Dictionary* (1929). Masonic societies, says that work, "are really sectarian bodies, having their own formulas of belief about God, the soul, conscience, etc., and their own secret as well as public ritual, so that a Catholic may not consistently belong to them any more than he may be a member of any other church than his own." And again: "Since 1738 Catholics are, under penalty of excommunication incurred *ipso facto* and reserved to the Pope, strictly forbidden to enter Masonic societies, or promote them in any way." Catholics as such are not prevented from becoming Freemasons by any tenet of the order, and nominal Catholics may and sometimes do become Masons; but from what has been said above it will be seen that a person who is both a Catholic and a Mason is not likely to be in good standing in the Catholic Church. Some of the confusion on this subject arises from the fact that *Catholic* is often applied to persons who are not actually communicants of that church, just as *Protestant* is often used as a general appellation for non-Catholics even when they are not communicants of any church.

Why is *sterling* applied to money?

Sterling appears to have been first applied to English money in the time of the Norman kings. According to the commonly accepted hypothesis, the term was derived from *Esterling*, the name given to the merchants of the Hanseatic towns in North Germany who early traded with the English and who made coins so much more stable in value than any other money then in circulation that they became associated with sound money and the standard of purity. This interesting theory that "sterling money" was originally "Esterling money" was advanced as early as about 1300 by Walter de Pinchebek, who referred to the Esterlings as the original "moneysers." There are two objections to the theory. In the first place, *Esterling* seems not to have been applied to the Hanseatic merchants until just before the beginning of the fourteenth century; and in the second, it seems improbable that the stressed first syllable of a name would be the part dropped. It is certain that *sterling*, virtually in its present form, was applied to English silver coins as early as 1180, during the reign

of Henry II, and that the excellence of these coins and the stability at which they were maintained resulted in their wide circulation on the continent. Gradually the term was extended to include current coins in general, and finally it came to signify coins of standard fineness. The records of the thirteenth and fourteenth centuries contain many references such as "four thousand pound of *sterlyings*" and "ten pound of *sterlings*." A *pound of sterlings*, that is, a pound in weight of English pennies called sterlings, became, by ellipsis, a *pound sterling*. A statute of 1166 declared that the English penny called a sterling "shall weigh 32 wheat corns in the midst of the ear." Presumably *sterling* is of native English origin and was at first descriptive of some characteristic in the design of the Norman pennies. It is not uncommon for coins to acquire their popular names from something in the design. Thus, for instance, we have "Liberty nickels" and "Lincoln pennies." Perhaps *sterling* is derived from Anglo-Saxon *steorling*, "little star," and at first referred to the little stars or "asterisks" in the designs of some of the early pennies; or perhaps it is a corruption of *staerling*, "starling," and had reference to the four birds conspicuous on coins in the time of Edward the Confessor. In Scotland the term was confused with *Stirling*, and one often hears it said that sterling coins were so called because they were first minted at Stirling in the time of Edward I. From silver coins to silver bullion was a natural transition, and silver of an accepted fineness came to be known as sterling silver, which is about 95.5 percent fine and never contains more than 7 percent alloy. The term had already acquired its present figurative sense in Shakespeare's time. In *Hamlet* Polonius tells his daughter Ophelia to "think yourself a baby, that you have ta'en these tenders for true pay, which are not sterling," and in *King Richard II* the deposed king uses the expression, "an' if my word be sterling yet in England."

Why is a grocer so called?

In olden times a person who dealt in spices, sugar, dried fruits, tea, coffee and such foodstuffs was called a spicer. *Spice* is an alteration of *species*, "kind." A wholesale dealer in such articles was known as a *spicer en gross* or a *grosser*, that is, one who dealt by the gross, bulk or unbroken packages. *Gross* is from French *gros*, "great" or "large," and in process of time *grosser*, probably owing to the influence of French *merchand grossier*, became simply *grocer*. The London grocers, who were incorporated in 1344, originally were wholesale dealers in spices and foodstuffs from foreign lands. In the course of time the term

was extended to embrace retail as well as wholesale food dealers. One who deals in fresh vegetables and fruits used to be called a greengrocer. There seems to be no good reason for accepting the suggestion that grocers were so called because they traded to a considerable extent in *grossis*, "figs."

Why is a watch called a turnip?

Turnip as a facetious name for a watch was probably suggested by an old English nursery rhyme often included in the collection attributed to Mother Goose.

If wishes were horses, beggars would ride;
If turnips were watches, I would wear one by my side.

The earliest use of *turnip* as a slang term for a watch recorded by the Oxford dictionary is dated 1840. It was more apt in the days of old-fashioned thick silver watches than it is today. Huge watches of the turnip variety are now seldom seen. For some unexplainable reason the turnip has been treated for centuries as if it were a joke. Even Samuel Johnson joined in ridiculing this garden and field vegetable that has contributed its share of food to man and beast. In *Burlesque of Lopez de Vega* the Great Cham of English Literature wrote:

If the man who turnips cries,
Cry not when his father dies,
'Tis a proof that he had rather
Have a turnip than his father.

A nonsense verse, persistently attributed to Henry Wadsworth Longfellow but the authorship of which was denied by him, runs:

Mr. Finney had a turnip
And it grew behind the barn;
And it grew and it grew,
And that turnip did no harm.

In *Japhet in Search of a Father* (1836) Captain Frederick Marryat wrote: "There's no getting blood out of a turnip." This was merely an English version of a Latin proverb translated, "You can't get blood out of a stone." Samuel Butler, author of *Hudibras*, said: "A degenerate nobleman, or one that is proud of his birth, is like a turnip. There is nothing good of him but that which is underground." But Sir Thomas Overbury had fifty years earlier made a similar observation about the potato. Notwithstanding Butler's observation, turnip

tops, prepared like spinach or kale, are a delicacy, and turnip greens are a common ingredient of "pot likker." In *David Copperfield* Dickens has Barkis say, "It was as true . . . as turnips is." *Nip* in *turnip*, as well as in *parsnip*, is from Old English *naep*, "taproot." The turnip was so called because when the root (*naep*) was pulled from the ground it looked as if it had turned around or spun. Turnips belong to the same plant family as the cabbages and have long been cultivated. The common garden variety or white turnip is often called the English turnip in America. Under date of August 15, 1761, George Washington at Mount Vernon noted in his diary: "Sow'd abt. half an Acre of English Turnip Seed." It is estimated that there are from 160,000 to 190,000 turnip seeds in a pound. Turnips weighing more than twenty pounds have been grown. A variety of large turnip introduced into England about 1780 from Sweden is variously known as the yellow turnip, Swedish turnip, swede, Russian turnip and rutabaga, the last term being a modification of the Swedish name of the vegetable. It has a long, yellow-fleshed root and smooth, cabbagelike leaves.

Why is a small firearm called a pistol?

Pistol is derived indirectly from *Pistoia*, the name of a town north of Florence in Tuscany, Italy. This town was at one time noted for its iron and steel products, and a large dagger or knife manufactured there was called *pistolese*. When firearms came into general use in Europe the name in the form of *pistolet* was transferred to a small firearm that had a curved stock and that was adapted to being held and fired by one hand. Such firearms were made at Pistoia by Camillo Vettelli as early as 1540. Ancient (Ensign) Pistol is a swashbuckling soldier and follower of Sir John Falstaff in Shakespeare's *II King Henry IV*, *King Henry V* and *The Merry Wives of Windsor*.

Is there a river named Stinking Water?

Stinking Water River has been the name of several streams in the United States, but no important river bears that name at present. It appears on maps made before 1901 as the name of a river in north-western Wyoming. The river was so named by the Indians and the early settlers because of the malodorous mineral springs located in the edge of the stream a few miles west of the town of Cody. The odor is produced by sulphurated hydrogen gas. Many inhabitants of the Big Horn Basin objected to the name and petitioned the legislature to change it to Shoshone. In 1901 the legislature enacted, "That the name of the stream of water known on the map of the United States

as the Stinking Water River, situated in Big Horn County, Wyoming, and emptying into the Big Horn River, is hereby changed to the Shoshone River, and shall hereafter be designated and known as such." Captain William Clark of the Lewis and Clark Expedition named a stream in southwestern Montana the Philanthropy River in honor of President Jefferson. Philanthropy, wrote Clark in his journal, was one of the "cardinal virtues which have so eminently marked that deservedly celebrated character through life." The first settlers, unaware that Clark had christened the river, called it the Passamari, a Shoshoni Indian word meaning "Stinking Water," which was for many years the local name of the stream. Now, however, it is known as the Ruby River.

Where do earthworms grow ten feet long?

An earthworm native to southeastern Australia attains an extreme length of ten or twelve feet and a diameter of three-fourths of an inch, although the average specimen is only three or four feet long. This species belongs to the same animal group as ordinary angleworms, being scientifically known as *Megascolides australis*. The progress of these gigantic worms through the soil is attended by gurgling and sucking sounds clearly audible to persons walking on the surface. Their eggs resemble large olives. Related species that attain a length of several feet are found in South America, Java and other parts of the world.

How did "Go to Halifax" originate?

Halifax in *Go to Halifax* is merely a euphemism for hell. Centuries ago the town of Halifax in the West Riding of Yorkshire, England, adopted a severe law to protect its cloth industry from petty thieves. Under this law, popularly known as Halifax law or gibbet law, the inhabitants were granted the power of executing any person taken within their liberty who, after being tried by a jury, was found guilty of stealing goods of the value of thirteen pence or more. The executions took place on a hill outside the town on market days and became notorious throughout England. A print of the old Halifax gibbet was reproduced in 1708 in a book entitled *Halifax and the Gibbet Law*. In this case the gibbet was not a gallows but a crude, guillotineline machine for decapitation somewhat like the "Scotch Maiden." The base of the Halifax gibbet still stands on Gibbet Lane in the town. Although the last execution on the Halifax gibbet occurred in 1650, *Halifax law* still survives in the sense of a speedy and summary trial

followed by immediate execution. Because of the severity of its penal code Halifax was carefully avoided by thieves, beggars and vagabonds. Hull in Yorkshire also had a reputation for strict law enforcement and to the underworld characters of England during the fifteenth, sixteenth and seventeenth centuries *Hull*, *Halifax* and *hell* were synonymous terms, the alliteration in the words serving to link them together in the popular mind. Of the three hell was probably the least feared because it was the most distant. "From Hell, Hull and Halifax, good Lord, deliver us," is quoted as a rogue's prayer in Anthony Copley's *Wits, Fits, etc.* (1594). John Taylor (1580-1653), known as "the water poet," wrote in *A Very Merry-Wherry Voyage*:

There is a proverb, and a prayer withal,
That we may not to three strange places fall.
From Hull, from Halifax, from Hell, 'tis thus,
From all these three, good Lord, deliver us.

In 1650 the Water Poet wrote the following doggerel:

At Halifax the law so sharpe doth deale,
That whoso more than 13 pence doth steale,
They have a jyn that wondrous quick and well
Sends thieves all headless into heaven or hell.

Go to Halifax is often erroneously connected with Halifax in Nova Scotia, because it was to that port that General Howe and his British army sailed in the spring of 1776 after being driven out of Boston. But that city was not founded until 1749, when it was established as a rival of the French town of Louisburg in Cape Breton and named after the second earl of Halifax, then president of the Board of Trade and Plantations. A resident of Halifax is called a Haligonian.

What animals come down trees head first?

Squirrels, chipmunks and similar light-bodied arboreal rodents are the only mammals that habitually and naturally come down trees head first. The Chippewa Indian word for squirrel and chipmunk is *atchitamón*, "head first," and refers to this habit in descending trees. Apes, raccoons, porcupines, opossums, kinkajous (*Potos flavius*), coati-mundis (*Nasua narica*) and other heavier bodied tree climbers come down perpendicular trees tail first by preference, using the claws to help support the weight of the body, although some of these species reverse the method when in a hurry or when the tree is inclined. Bears climb trees in a slow, lumbering fashion and invariably come down

backward like a lineman coming down a telephone or telegraph pole. The porcupine, which is a rodent, descends a tree hindquarters first and uses its tail as a feeler. It is said that a thick rope tied around the trunk of a tree will keep one of these animals aloft for days. Although the raccoon, which is related to the bear, normally comes down hindquarters first, it is not loath to descend head first when the occasion demands it. Foxes and the smaller members of the cat family sometimes ascend trees, but they are not true tree climbers and they come down in a rather unnatural and awkward manner. The coatimundis, long, slender, raccoonlike carnivorous animals with flexible snouts and ringed tails, are remarkably agile and are said to be the only arboreal mammals of any size that are not particular about the manner in which they descend from trees. They are almost as likely to come down head first as hindquarters first. "When in a hurry," wrote Dr. William M. Mann, director of the National Zoological Park at Washington, "the coatimundi is very liable simply to drop from the branch of a tree. When hunting them in South America I have seen them coming down like rain—a dozen at a time—with legs outstretched and tail held high. As soon as they strike the ground they rush away through the underbrush but soon climb another tree." Coatimundis are native to South and Central America and one species has been found as far north as California. The name is a Spanish and Portuguese rendering of native words meaning "belt" and "nose" and refers to the animal's habit of sleeping with its nose against its belly. Kinkajous are relatives of the coatis and the raccoons and have about the same general habitat. They are nocturnal arboreal animals with large lustrous eyes and long prehensile tails.

How is *Cowper* pronounced?

Few names in English literature are more commonly mispronounced than that of the English poet William Cowper (1731-1800). The evidence is conclusive that the poet and members of his family, as well as his contemporaries, pronounced the name *Koo-per*, exactly like *Cooper*, of which it is a variant. Cowper's ancestors spelled the name *Cooper*. John Cooper, who was an alderman of London and who died in 1609, changed the spelling to *Cowper* and that spelling was adopted by his descendants. All members of the family from that day to this, including the poet, have pronounced the name *KOO-per*, although many other families bearing the same name pronounce it *KOW-per*, and that pronunciation of the name of the poet now generally passes unchallenged. Six years after Cowper's death his name was made to rhyme

with *trooper* in an answer to a riddle proposed by him. The riddle, which occurs in a letter to the Reverend John Newton dated July 30, 1780, reads:

I am just two and two, I am warm, I am cold,
And the parent of numbers that cannot be told;
I am lawful, unlawful,—a duty, a fault;
I am often sold dear, good for nothing when bought;
An extraordinary boon, and a matter of course;
And yielded with pleasure when taken by force.

The following answer was printed in the *Gentleman's Magazine* in 1806:

A riddle by *Cowper* made me swear like a *trooper*,
But my anger, alas! was in vain;
For, remembering the bliss of beauty's soft kiss,
I now long for such riddles again.

What admiral was shot for an error of judgment?

The only British admiral ever executed is said to have been put to death for an error of judgment. In 1756 Admiral John Byng (1704-1757), a son of Admiral Viscount George Byng (1663-1733), was ordered from the English Channel to the Mediterranean to relieve Fort St. Philip in Minorca, which was threatened by the French. On May 20 Byng, who had gained the weather gauge, bore down upon the fleet of M. de la Galissonière at such an angle that his leading ships went into action without the support of the rest of his line. The French, who equaled the English in numbers, quickly destroyed the leading ships of the enemy and then slipped away undamaged. When the flag captain explained to Byng that he could bring the center of the enemy's fleet to closer action by standing out of his line, the admiral refused to act upon the suggestion because another British officer had been condemned for doing that very thing. He made no further attempt to communicate with the fort but, after remaining in the vicinity of Minorca for four days, sailed to Gibraltar, where he was arrested, taken a prisoner to England, court-martialed, condemned to death and shot March 14, 1757, on board the *Monarch* off Spithead. The naval court that tried Admiral Byng acquitted him on the charges of personal cowardice and disloyalty, but convicted him on the charge of neglecting his duty in not doing his utmost as required by the Articles of War, which at that time left nothing but death as the penalty for any officer of rank who did not do his utmost in fighting or

pursuing the enemy. Although at first there was a savage outburst of wrath in England against the unhappy admiral, the severity of the sentence and the suspicion that the government was merely passing the buck led to a reaction in his favor and it became a common saying that Admiral Byng was executed for an error of judgment.

Do prairie dogs and rattlesnakes live together?

Ever since prairie dogs were first observed on the western plains there has been a popular notion that they live together in peace and harmony with rattlesnakes and burrowing owls. Of course, the prairie dog, of which there are five known species, is not a dog, but a social ground squirrel that received its misnomer because when excited it makes a sound described as a feeble, short bark. Prairie dogs live in large colonies and put in their extra time burrowing. A "prairie dog town" in Kansas and Colorado was nearly a hundred miles long and from one to five miles wide and had a population of millions. Rattlesnakes and burrowing owls are often found in the dens of prairie dogs, but the relationship is far from a peaceful one. Both the rattlers and the owls visit the prairie dog towns chiefly to catch and eat young prairie dogs. The snakes prowl among the burrows and fill themselves with "hot dogs," after which they often linger in the holes while digesting their meals. Occasionally a snake tackles even an adult prairie dog, initiating a battle that the snake generally wins. Frequently rattlesnakes are seen sunning themselves at the entrances of the prairie dog holes after having preyed upon the original owners. Burrowing owls not only feed upon young prairie dogs but also use the abandoned burrows for building their nests and rearing their young. When they get a chance the rattlesnakes also prey upon the owls. In *The Oregon Trail* (1849) Francis Parkman wrote: "Several times I passed through villages of prairie dogs, who sat, each at the mouth of his burrow, holding his paws before him in a supplicating attitude, and yelping away most vehemently, energetically whisking his little tail with every squeaking cry he uttered. Prairie dogs are not fastidious in their choice of companions; various long, checkered snakes were sunning themselves in the midst of the village, and demure little gray owls, with a large white ring around each eye, were perched side by side with the rightful inhabitants." And again: "The snakes are apparently the prairie dogs' worst enemies, at least I think too well of the latter to suppose that they associate on friendly terms with these slimy intruders, who may be seen at all times basking among their holes, into which they always retreat when disturbed. Small owls, with wise and

grave countenances, also make their abode with the prairie dogs, though on what terms they live together I could never ascertain." Prairie dogs, though harmless in themselves, do considerable damage. As rodents they are vegetarians and deprive livestock of large quantities of vegetation. Some of their burrows go down fourteen or fifteen feet and the pioneers avoided riding or driving across prairie dog towns because of the danger that the horses might break their legs by stepping in the holes. Those who have eaten it say their flesh, though a little stringy in the spring, is tasty and tender at other times.

When did the United States first coin five-cent pieces?

The United States government first minted five-cent pieces in 1794. These early pieces—popularly known as half dimes—were silver and contained no nickel. Silver five-cent pieces were discontinued in 1873. Those minted from 1829 to 1837 were marked 5C and were about three-fourths the size of the modern dime. The government also coined silver three-cent pieces from 1851 to 1873. These coins were finally abandoned because they were regarded as a nuisance in business dealings. In 1866 the first nickel five-cent pieces were issued. The design on these first "nickels" consisted of the American shield on one side and a large figure 5 on the other and remained unchanged until 1883, when the Goddess of Liberty was substituted for the American shield and the Arabic figure 5 was replaced by the Roman numeral V. The Liberty-head design was replaced in 1913 by the buffalo design, which in turn was replaced in 1938 by the Jefferson design. Nickels are the most popular and widely used of all American coins. During the first seventy-five years of their existence more than two billion were struck off. The standard nickel contains more copper than the standard penny. The five-cent piece usually contains 75 percent copper and 25 percent nickel—that is, 57.87 grains of copper and 19.29 grains of nickel; while the one-cent piece usually contains 95 percent copper and 5 percent tin and zinc—that is, 45.6 grains of copper and 2.8 grains of tin and zinc. Hence there are 12.27 grains more copper in a standard nickel than in a standard penny, and the coin known as a nickel contains three times more copper than nickel. During the Second World War the secretary of the treasury, by act of Congress, was permitted to substitute other materials in nickels and pennies to conserve critical metals. Consequently wartime nickels contained 35 percent silver, 56 percent copper and 9 percent manganese. Although they contained no nickel, these coins continued to be called nickels. In 1945 Congress voted to return to the use of nickel in nickels beginning in 1946.

During 1943 one-cent pieces were made of zinc-coated steel, but these coins, shiny in appearance and light in weight, were easily confused with dimes and would not work in many slot machines, and minting them was discontinued at the end of the year. Congress authorized the secretary of the treasury to mint three-cent pieces during the war, but no coins of that denomination were struck off.

What is the Devils Tower?

The Devils Tower is a remarkable towerlike mass of igneous rock on the bank of the Belle Fourche River at Sundance in the extreme north-eastern county of Wyoming about twenty-five or thirty miles east of Moorcraft. The tower proper is about 350 feet in diameter and rises about 600 feet above the larger platformlike base of buff sandstone, which in turn rises 600 feet above the river and is some 1,700 feet in diameter. It has been described as a "volcanic plug" and is an exceptionally fine example of the prismatic structure that igneous rocks sometimes assume in cooling. The sides of the tower are fluted by great columns that flare out at the base and round in toward the top. Most of these columns, ranging in diameter from five to six feet, are pentagonal in shape, although some of them are four or six sided. The entire mass measures more than a mile around the base. Comparable in beauty to the Giants' Causeway in Northern Ireland and the Hudson Palisades in New York, the whole gives the appearance of an immense bundle of perpendicular pillars held together by an invisible cord. From a distance it suggests a gigantic tree trunk. The only vegetation on the top—about 100 by 300 feet in area—is scrub brush in the rock crevices, and the only animal life consists of rats, mice and chipmunks. Among the Sioux Indians in that vicinity the Devils Tower was regarded with awe and they were responsible for its forbidding name. To them it was the "bad god's home" and there the thunderbird resorted to beat his mammoth drum and make thunderstorms. They were afraid to go near the strange structure, but it served as a landmark to guide them in their journeys over the neighboring plains. An Indian legend accounts for the origin of the tower. Three Sioux maidens long ago were gathering flowers near by when they were attacked by three grizzly bears. The maidens took refuge on a rock, but the bears began to climb the rock with their long, sharp claws. When the gods saw that the maidens were about to be devoured they caused the rock to grow out of the ground into the great tower. To this day the marks of the claws of the bears can be seen on the sides of the rock. Finally the bears, after nearly reaching the top, fell down

and were killed, and the maidens let themselves down by means of a rope that they made of the flowers they had gathered. The Devils Tower was the first natural structure in the United States to be taken over by the federal government, the initial protection having been extended September 24, 1906. Similar protection was extended to Montezuma Castle in Arizona December 8 of the same year. On October 4, 1915, President Wilson issued an executive order converting about 1,152 acres around Devils Tower into what is technically known as a national monument. A local rancher named Will Rogers climbed to the top of Devils Tower July 4, 1893, and is believed to have been the first white man to do so. In October, 1941, after some forty persons had climbed to the top of the tower, George Hopkins, of San Antonio, Texas, parachuted onto it from an airplane as a publicity stunt and to win a fifty-dollar bet. The daredevil parachuter found that he could not get down from the cold, wind-swept table. It was necessary to drop him food, blankets and a tent from an airplane to prevent him from freezing to death. He had been on the tower 130 hours when he was finally rescued by a crew of experienced mountain climbers who got him down with a ladder of steel spikes.

What is a laughing jackass?

Laughing jackass is the literal meaning of *Dacelo gigas*, the scientific name of a strange and interesting Australian bird belonging to the kingfisher family and related to the common American kingfisher. The native name of this bird is *kookaburra*, which is probably of imitative origin. It received its popular and scientific names from the fact that it utters a loud, prolonged, raucous, cackling, laughlike call suggesting the braying of a donkey. The laughing jackass, which is about the size of an ordinary crow, has a white head, a dark body and a huge bill. It lives on dry land far from the water and feeds chiefly on snakes and other reptiles. Birds of this species make good pets and are favorites in zoos. They are protected by law in Australia.

What is the Salton Sea?

The Salton Sea is one of the most remarkable bodies of water in the world. It is a large temporary lake in southeastern California formed in 1905 and the two years following by the accidental diversion of the Colorado River. In the desert lying between the San Bernardino Mountains on the one hand and the Superstition and Chocolate Mountains on the other was a great salt marsh known as the Salton Sink or the Salton Basin. This sink in the most depressed places was as

much as 280 feet below sea level. Centuries ago, geologists believe, the region formed part of the Gulf of California and the waters of the Colorado River flowed alternately into the gulf proper and into the Salton Sink. The Imperial Valley may be regarded as a sort of delta thus formed. Previously to about 1893, when attempts were made to divert water into the region from the Colorado for irrigation purposes, the Salton Basin was largely a waterless waste. The river was tapped a few miles below the California-Mexican line and carried into the Imperial Valley by means of a canal or irrigation ditch some forty-five miles long. In 1905 the waters of the Colorado broke through an inadequately controlled intake and soon afterward the entire discharge of that great river was pouring into the Salton Basin. The Imperial Valley and much of the route of the Southern Pacific Railroad in that region were threatened with complete inundation. Salton Sink filled with water and formed a lake 50 miles long, 10 to 15 miles wide, more than 75 feet deep in the deepest places and with a total water area of some 445 square miles. Wide and deep channels were cut through the silt and soft soil of the region for many miles. President Theodore Roosevelt called upon the Southern Pacific Railroad Company to aid in trying to control the new channel of the runaway river, which if left to itself would flood 2,000 square miles of territory. After many futile efforts and the expenditure of some two million dollars the flow of the water was finally checked on February 11, 1907, and a line of protective levees was constructed to make the work permanent. The new body of water formed in the old Salton Sink was called the Salton Sea. Although the water from the Colorado was fresh, the salt accumulation in the sink made the lake brackish. As the years passed the Salton Sea, the roughest inland body of water in the United States, was gradually reduced by seepage and evaporation until in 1920 it covered only about 250 square miles, where it remained virtually stationary for many years.

Did a Protestant or a Catholic write *Lead, Kindly Light*?

Lead, Kindly Light, amid the encircling gloom;
Lead thou me on!
The night is dark, and I am far from home;
Lead thou me on!
Keep thou my feet: I do not ask to see
The distant scene; one step enough for me.

This beautiful hymn entitled *The Pillar of the Cloud* but better known as *Lead, Kindly Light* from its opening words was composed

by an English Protestant who afterwards became a Roman Catholic. In December, 1832, John Henry Newman (1801-1890), a leader in the Anglican Church, set out with his friend H. Hurrell Froude on a Mediterranean cruise, which lasted until July, 1833, and which took him to North Africa, Italy, Greece and many other interesting and historic lands. While the orange boat in which he was traveling was becalmed in the Strait of Bonifacio between the islands of Corsica and Sardinia Newman composed *Lead, Kindly Light*, a hymn that is now treasured by the entire English-speaking world. It was published first in the *British Magazine*, edited by H. J. Rose, known as "the Cambridge originator of the Oxford Movement." Newman's comments upon his visit to Rome show clearly that he was still strongly Protestant in his religious views. After his return to England he became a leader in the movement variously styled High Church, Oxford, Puseyite and Tractarian. In 1845, twelve years after he wrote *The Pillar of the Cloud*, he was formally received into the Catholic Church, and in 1879, when he was nearly seventy-nine years of age, he was raised from the rank of simple priest to that of cardinal. He is generally known as John Henry Cardinal Newman.

What is black diamond?

Black diamond is the popular name of a dark mass form of impure diamond technically known as carbonado or carbonate. This stone, sometimes referred to as the anthracite variety of diamond, ranges from dark gray to black in color. Carbonado is slightly cellular and has a lower specific gravity than white diamond. Carbon in this form is the hardest stone with which science is acquainted. It occurs in commercial quantities only in the Brazilian state of Bahia, where it was first found in 1876. Since it had indications of being some sort of diamond, lumps of the substance were sent to diamond merchants in Amsterdam as curiosities. The value of black diamond was discovered by accident. A lump of it weighing 2,000 carats was used as a counterweight on a door in a diamond cutter's shop. One day a workman, who had been having difficulty in polishing the facets of a diamond, split off a corner of the huge black diamond and powdered it. To his surprise he found it was much more effective than the powder of ordinary diamond. Although black diamond has no particular value as a gem stone, because of its toughness and lack of cleavage it is used not only in diamond drills but also in truing abrasive wheels, in wire-drawing dies, in specially shaped tools for working metals and in sawing granite and marble. The largest black

diamond ever found was discovered in Bahia in 1895 and weighed 3,078 carats. The finder, regarding it only as a curiosity, sold it for \$16,000. Today it would be worth several million dollars. Sometimes *black diamond* is applied to ordinary coal, which is carbon in another form. In 1860 Edwin A. Pollard, of Virginia, published *Black Diamonds*, a book dealing with Negro slavery.

How did the kangaroo get its name?

Nobody knows for certain how the kangaroo got its queer name, which is believed to be of Australian native origin. There are fourteen or fifteen families and some fifty species of these picturesque marsupials and they range in size from that of a rabbit to that of a large man. All of them are indigenous to Australia and certain neighboring islands. So far as known the earliest mention of these animals was in 1711, when the Dutch governor had one in his garden at Batavia, Java. It came from one of the Aru islands southwest of New Guinea. Sir Joseph Banks, who accompanied Captain James Cook to the Pacific to observe the transit of Venus, was the first naturalist to observe the kangaroo in its habitat. A member of the expedition reported that he had seen "animals as large as a greyhound, of a mouse color and very swift." According to an apocryphal story, when Captain Cook asked the Queensland natives what the odd animal was, they replied, "Kan-ga-roo," which actually means "What did you say?" or "I do not know," but which Captain Cook mistook to be the native name of the animal. The natives did not use *kangaroo* but called the larger species *wallaby* and the smaller ones *walleroo*, terms that are still used. Some of the largest kangaroos attain a height of seven or eight feet and a weight of 200 pounds. Their young at birth are smaller in proportion to the size of the parents than the young of any other animal. The newborn young of a female gray kangaroo, which is as tall as an average man and weighs 150 pounds, are about an inch long and weigh about 20 grains or $\frac{1}{350}$ of a pound. Multiple births are rare in these animals. By means of its perfectly formed front legs the tiny, pinkish, naked mass propels itself to the pouch on the mother's abdomen where it is nourished and sheltered for several months until it may weigh eight or ten pounds. In adult kangaroos the forelegs are small and poorly developed while the hind legs are large and powerful. The opposite is true in newborn kangaroos, which, though tiny in size, have comparatively strong, well-developed forelegs but hind legs that are scarcely more than embryonic buds. Travelers in Australia often comment on the picturesque sight presented by large male kangaroos

bounding at full speed over a plain. The adult gray kangaroo, also called boomer and old man, can cover from ten to twenty feet in a single leap, although it seldom leaps as much as twenty feet except when frightened. Individuals have been known to clear twenty-six feet in one leap. When moving slowly on all fours the boomer uses its tail as a prop while the hind legs are moved forward; when the animal attains full speed its forelegs are farther back than its hind legs part of the time. The tail aids the animal in leaping and acts as a "fifth leg" or balancing pole. A kangaroo without a tail easily overbalances and turns somersaults. Although the kangaroo cannot be led, it can be steered by its tail. The leaps of a kangaroo are not high from the ground and the animals can be confined by a comparatively low fence. Gray kangaroos seem to grow in size as long as they live. They have the habit of boxing with one another. Easily tamed, they are often trained to box on the stage. The "boxing kangaroo," however, is dangerous because it can kill a man or dog with one blow. Australian natives consider kangaroo meat a delicacy and kangaroo tail soup has been praised by gourmets. Some years ago American explorers in New Guinea found a species of small kangaroo that climbs trees. In Australia kangaroos are sometimes shot because their hides make desirable leather and because, being vegetarians, they damage crops.

Are waterspouts composed of fresh or salt water?

Waterspouts at sea are composed chiefly of fresh water, not salt water, as commonly supposed. There are at least two types of waterspouts. One is generally small and starts at the water surface somewhat like dust whirls on hot, dry plains. The other, the typical waterspout, originates in the upper atmosphere and is set in motion by a conflict of winds of different temperatures. It starts at a cloud level and burrows down. Such an aerial vortex is essentially a tornado over water, although generally less violent than the average tornado over land. It occurs as a rapidly whirling, funnel-shaped column of air, extending from a storm cloud to the water level, the axis being visible as a column of water or water vapor. A strong upward indraft beneath the base of the cloud produces the formation and the air supplying the indraft acquires a rapid rotary motion as it ascends. A decided low pressure in the central axis of the eddy is produced and the rising air flowing into the column expands as it passes into places of low temperature. This in turn causes the air to cool and become visible by condensation of part of the moisture. A waterspout usually agitates the water surface violently and appears to draw a "spout" of water to

meet the cloud above, but this is largely an illusion, for the chief part of the visible column is composed not of sea water but of moisture from the cloud and the air. As a rule the sea water in a waterspout does not rise more than a few feet from the surface, although it sometimes rises much higher. When a ship runs into the typical waterspout it is generally drenched with fresh rather than salt water, and salt spray is noticeable only near the surface. Waterspouts of this type range in diameter from a few inches to hundreds of feet and in height from hundreds to thousands of feet. One estimated to be 5,000 feet high was observed off New South Wales in 1894. When conditions are favorable many waterspouts may occur in the same region. They move rapidly and are generally short lived. Waterspouts occur over lakes, rivers and other inland bodies of water as well as over the sea. Their lifting power is considerable and it appears to be well established that such whirling winds have sucked up and carried away the entire contents of small ponds, pools and reservoirs. Formerly seamen regarded waterspouts with terror and it is still popularly supposed that the water in waterspouts is dangerous to large vessels, but the "column of water," which is largely imaginary, is actually dangerous only to boats and small craft. The chief danger from waterspouts lies in the wind. Sailing ships have been wrecked by waterspouts and they are still a hazard to aircraft and vessels. During the Middle Ages mariners tried to frighten waterspouts away with various incantations, and later it was erroneously believed that they could be broken up and caused to collapse by firing muskets and cannon at them.

How did hoodlum originate?

The colloquial term *hoodlum*, signifying a bully, ruffian or street rowdy, originated on the Pacific coast, presumably in San Francisco, in the decade after the Civil War. It was already current in 1872, for on February 24 of that year the *Sacramento Weekly Union* referred to "pettifoggers, polite loafers, street-hounds, hoodlums, and bummers." A dispatch to the *Boston Journal* in 1877 said: "You at the East have but little idea of the hoodlums of this city [San Francisco]. They compose a class of criminals of both sexes, far more dangerous than are to be found in Eastern cities. They travel in gangs, and are ready at any moment for the perpetration of any crime." By that time the origin of the word had been lost, but it began to excite the attention of the press and all sorts of fantastic theories were advanced in the late seventies and early eighties to account for it. The most widely

accepted of these stories regards the term as a perverted back-spelling of *Muldoon*. As early as September 26, 1877, the *Congregationalist* printed a story to the effect that a San Francisco newspaperman desired to coin a word to designate a gang of young street rowdies led by one Muldoon and that he hit upon the idea of reversing the leader's name and called them *Noodlums*. The typesetter, mistaking the *N* for an *H*, set up the word *Hoodlums*, and thus it was first printed and thus it passed into general use. This is supposed to have happened about 1868. The story may or may not be true, for there is no contemporary evidence to prove or disprove it. According to another story, the term was suggested by a gang of San Francisco toughs who disguised themselves by wearing *hoods*. The word may have originated among the rough and lawless element and its origin may be forever lost. In their *Dictionary of Slang, Jargon and Cant* (1889) Barrere and Leland thought the term "probably of Spanish origin" or "the Pidgin English *hood lalont*, good, i.e., very lazy; *lalont'o*, mandarin."

Why are the records of a meeting called the minutes?

The official record of the proceedings at the meeting of an organized body was originally called the minutes because it was first taken down in *minute* or small writing later to be transcribed in a larger and more careful hand. In the sixteenth century *minute* was used as a verb in the sense of making record or note of. As early as 1502 the noun *minute* signified a note or memorandum for the direction of an agent or servant. *Minute* is derived from Latin *minutus*, "small," "little" or "tiny." Originally *minute* was pronounced the same when it meant small or tiny and when it meant a measure of time or space, as one-sixtieth of an hour. The Latin feminine form of *minutus* is *minutia*. The plural form, *minutiae* (pronounced *mi-NU-shi-ee* in English) is still used in the sense of little things or petty details.

Why was Mexican money used in China?

For many years Chinese financial transactions were generally made in terms of Mexican dollars. For instance, newspapers would report that the government of China had appropriated one million dollars "Mexican" for this or that purpose. During the early decades of the nineteenth century the Spanish dollar or peso was introduced into the Orient by Western traders. Before that there was no coin in general circulation in China except the small copper piece known as

the "cash." In the larger transactions uncoined silver bullion was employed, one Chinese ounce of silver being called a tael. Chinese merchants found the Western coins more convenient than bullion as a circulating medium and Spanish dollars were imported in large numbers. A shortage in the supply of Spanish dollars led to the introduction of Mexican dollars about 1840. A Mexican dollar or peso was then worth slightly less than fifty cents in American money. Within a very few years these coins, minted in Mexico by the Mexican government, circulated freely everywhere in China and were practically the only currency that had universal acceptance in that country. Finally even coins of the popular unit of value made in China were stamped "Republica de Mexico." Their only rivals were British dollars coined in India or Hong Kong and circulated in Chinese seaports. The continual exportation of Mexican dollars to China and other Oriental countries on a silver basis became an important factor in the distribution of Mexican silver. In 1902 China signed a treaty with Great Britain in which she agreed to establish a uniform system of national currency. During his regime Yuan Shih-k'ai coined Chinese silver dollars in the hope of initiating currency reforms, and after that several attempts were made to substitute native coins for Mexican dollars. Even in the late 1930's Chinese finances were still reckoned in terms of Mexican dollars, although the coins themselves were becoming scarce and their place was being rapidly taken by silver dollars of equal weight and value coined in China or Hong Kong. A few years later the Chinese central government adopted the yuan as the unit of currency and after that Chinese financial transactions were no longer reckoned in terms of "dollars, Mex."

Does it ever get too cold to snow?

The saying that sometimes it is "too cold to snow" has some scientific basis, but it should not be interpreted literally. It is true literally, says the United States Weather Bureau, only when the temperature approximates forty or fifty below zero and when the moisture content of the air is inappreciable. It never gets too cold to snow if there is sufficient moisture in the atmosphere. Snow is formed by the freezing of water vapor in the air and when the temperature drops to zero, or lower, the atmosphere can carry very little vapor and consequently heavy snowfall from such air is impossible. Light snows, however, occasionally occur at exceedingly low temperatures, and sometimes even heavy snows fall when the surface air is very cold. In the latter case the upper atmosphere where the snow is formed is comparatively

warm at the time. Heavy snowfalls are uncommon at temperatures below zero. As the temperature drops the atmosphere becomes drier and the snow lighter and more powdery. Generally when the temperature is below zero the air is too dry to produce large flakes of snow and the snow is in the form of ice spicules or dust. Great amounts of snow accumulate in the polar regions where temperatures are generally below the freezing point throughout the winter season. But it is not probable that the common expression "too cold to snow" originally had reference to extreme temperatures. In more or less temperate latitudes the greater part of the snow falls when the temperature is very little below the freezing point rather than when it approximates zero. This is because precipitation of any kind is most likely to come with southerly to easterly winds, that is, in what meteorologists call the rainy part of the cyclonic or storm area. As a rule these winds are comparatively warm. The winds generally shift to a northwesterly direction as the storm passes and become colder. In other words, the precipitation is likely to be followed by a clearing-up condition, accompanied by a decided drop in temperature. Therefore when the winter wind is from the northwest it is usually cold and from the wrong direction to produce snow. Those unfamiliar with meteorology say that it is then "too cold to snow." But the absence of snow is not due entirely to the coldness. It is due, rather, to the absence of other conditions necessary to produce precipitation of any kind. More than one-third of the surface of the earth never receives any snowfall. There is record of snowfalls in every state of the Union at one time or other. Oddly enough, the heaviest one-day and seasonal snowfalls in the United States of which there are records occurred in California. In 1908 sixty inches of snow fell in one day at Giant Forest, California, and during the winter of 1906-1907 88½ inches—over 73 feet—of snow fell at Tamarack in the same state.

Why is chinaware called porcelain?

Porcelain literally means "little pig" and the story of its application to chinaware is interesting. It is derived through the French from Italian *porcellana*, which in turn is a diminutive derived from Latin *porcus*, "hog," or *porca*, "sow." Sometime during the thirteenth century, or earlier, the Italians gave the name *porcellana* to Venus shells and other univalves belonging to the genus *Cypraea*. Why this odd name was given to these shells is a point that has not been definitely settled. The conventional explanation is that the shells were so called because the curved shape of the upper surface was fancied to

resemble the raised back of a little pig. It is easy, says the Oxford dictionary, to make toy pigs with Venus shells and putty, and such toys are sometimes seen on the market. However, Ernest Weekley offers a different explanation. He says that the shell took its name from the shape of the orifice—*porca*, "sow," being used for *vulva* in Latin. At any rate, a certain fine white earthenware first made in China was called *porcellana* because it resembled the interior of the shell in smoothness and whiteness or because it was popularly supposed to be made of the same substance. The story that *porcelain* is derived from French *pour cent annes*, "for a hundred years," because it was formerly believed that the material used in making this earthenware was matured underground for a century, does not ring true and has the earmarks of being a mere conjecture. Porcelain was made in China as early as the fifth century A.D., and was introduced into Europe in the latter part of the sixteenth. "China dishes" occurs in Shakespeare's *Measure for Measure* (1603?). It is a fancy, that can be neither proved nor disproved, that an alchemist discovered the process of making porcelain while experimenting with a view to obtaining a mixture of earth most suitable for durable crucibles.

What part of Kentucky can be reached only by passing through another state?

Owing to a loop or double bend in the Mississippi River there is an area of about ten square miles in the extreme southwest corner of Kentucky that can be reached from the rest of the state only by passing through a part of Missouri or Tennessee. By the treaty of 1783 between the United States and Great Britain the middle of the Mississippi became the western boundary of Kentucky, then part of Virginia. Kentucky successfully claimed the detached area because Missouri had no claim to territory on the opposite side of the river and Tennessee could claim no territory north of the line thirty-seven degrees and thirty seconds north latitude.

What is India paper?

Originally *India paper* was applied to a peculiar variety of cream-yellow or pale buff-colored printing paper made by hand in China and Japan from vegetable fiber and first imported into Europe during the middle of the nineteenth century when there was still a tendency to describe as *India* or *Indian* nearly everything that came from the Orient. The original India paper was thin, soft and absorbent and had a smooth but glossy surface. It was used particularly in making

the finest impressions and proofs from engravings and woodcuts. Now, however, the name is applied to a very thin, light, tough, opaque, machine-made paper used in printing Bibles, prayer books and compact dictionaries as well as high-grade, thin-paper pocket editions of other works, where it is desirable to reduce the bulk and weight as much as possible without diminishing the size of the print or impairing the durability of the book. The first paper of this type was made in 1875 by the Oxford University paper mills in imitation of a thin paper brought from the Far East by an Oxford graduate in 1841. Oxford India paper is made chiefly from rags, no mechanically prepared wood pulp being used in it. The opaqueness is produced by an admixture of mineral matter that is retained in the fiber, and the strength is due to freedom from wood pulp, although most of the desirable qualities of this paper are traceable not so much to the ingredients as to the careful process of manufacture. *Bible paper* is applied by Bible publishers to a strong, opaque and thin paper of a grade below India paper.

Who was author of the mousetrap quotation?

The mousetrap quotation, famous because of a controversy over its authorship, reads: "If a man can write a better book, preach a better sermon, or make a better mousetrap, than his neighbor, though he builds his house in the woods, the world will make a beaten path to his door." Nobody knows for sure who wrote it. Its earliest known occurrence in print is in a little anthology entitled *Borrowings* "Compiled by Ladies of the First Unitarian Church of Oakland, California" and first published in December, 1889. On page 38 of that work the mousetrap quotation is attributed to Ralph Waldo Emerson. Mrs. Sarah B. Yule, one of the compilers, wrote in 1912 that "to the best of my knowledge and belief, I copied it in my handbook from an address delivered long years ago, it being my custom to write everything there that I thought particularly good, if expressed in concise form; and when we were compiling *Borrowings*, I drew from this old handbook freely." Elbert Hubbard (1856-1915) and some of his associates claimed that he wrote this "modern proverb" and ascribed it to Emerson to give it "specific gravity." This claim of authorship is weak in view of the publication date of *Borrowings*, which attributed it to Emerson three or four years before Hubbard organized the Roycrofters and began his literary career. It is not uncommon for a person to absorb a quotation so completely that he believes himself the author, and that was probably the basis of Hubbard's claim. Although

it occurs nowhere in Emerson's printed or manuscript writings, all evidence points to the conclusion that he was the author. The theme of the mousetrap quotation was a favorite with Emerson and he was in the habit of repeating the same idea with verbal alterations. The *Saturday Evening Post* of March 20, 1852, quoted Emerson as saying in his lecture on wealth: "Every man must be bought at his own price in his own place. Lawyers agree that if a man understand the law he may open his office in a pine barrel, and the people will come to him when they want law." Three years later he wrote in his *Journal*: "If a man knows the law, people find it out, tho' he live in a pine shanty, and resort to him. And if a man can pipe or sing, so as to wrap the prisoned soul in an elysium; or can paint landscape, and convey into oils and ochres all enchantments of Spring and Autumn; or can liberate and intoxicate all people who hear him with delicious songs and verses; it is certain that the secret cannot be kept: the first witness tells a second, and men go by fives and tens and fifties to his door." In the same year he also noted in his *Journal*: "I trust a good deal to common fame, as we all must. If a man has good corn, or wood, or boards, or pigs to sell, or can make better chairs or knives, crucibles, or church organs, than anybody else, you will find a broad, hard-beaten road to his house, though it be in the woods." Emerson lectured in California in the spring of 1871 and in one of his lectures, perhaps at San Francisco or Oakland, he probably used the same idea, but different words, and that was the source referred to by Mrs. Yule. The mousetrap quotation is sometimes erroneously attributed to Dr. John R. Paxton because of a similar line of reasoning in his sermon entitled *He Could Not Be Hid* (1889).

Is it lawful to dun a person by postal card?

Under the United States postal laws it is unlawful to send by mail a card dunning the person to whom it is addressed for a debt or an account past due. This is based on the following provision in Section 471 of the United States Postal Laws and Regulations of 1924: "All matter otherwise mailable by law, upon the envelope or outside cover or wrapper of which, or any postal card upon which, any delineations, epithets, terms, or language of an indecent, lewd, lascivious, obscene, libelous, scurrilous, defamatory, or threatening character, or calculated by the terms or manner or style of display and obviously intended to reflect injuriously upon the character or conduct of another, may be written or printed or otherwise impressed or apparent, are hereby declared unmailable matter, and shall not be conveyed in the mails

nor delivered from any post office nor by any letter carrier, and shall be withdrawn from the mails under such regulations as the Postmaster General shall prescribe." The Post Office Department has ruled that this clause prohibiting language calculated to reflect injuriously upon the character or conduct of another forbids the mailing of postal cards on which the addressees are dunned for accounts past due. It does not, however, include cards bearing respectful requests for the settlement of current accounts or giving notice that accounts, assessments, taxes and bills will be due. Although the provision against matter of a "threatening character" is held by the department to cover and make unmailable cards that threaten to bring suits or legal proceedings if debts and accounts are not paid, it does not include cards sent out by fraternal and other societies to notify members of assessments and to call respectful attention to the rules of the society prescribing suspension from the society for failure to pay.

Does a dying person fall backward or forward?

In conventional pictures and descriptions of battles and other death scenes persons fatally shot are often erroneously portrayed as falling backward. But a person who suddenly dies while standing, whether from bullets, heart failure or other cause, almost invariably falls forward. The same is true of a person who faints while standing. The force of a bullet, even when fired from the front, is not as a rule sufficient to overcome the natural tendency of a dying person to fall forward. This was understood by Homer, who lived nearly 3,000 years ago. In the *Odyssey* it is related that "Telemachus hit Leocritus son of Evenor in the belly, and the dart went clean through him, so that he fell forward full on his face upon the ground."

How is rainfall measured?

In the United States rainfall is measured by the inch. An inch of rain is the amount of precipitation on a surface to the depth of one inch. When we say the annual rainfall of a certain state is ten inches, we mean that there is enough precipitation on it each year to cover the entire surface, if it were perfectly level, to the depth of ten inches. Sanskrit records indicate that rain gauges of some kind were used systematically to measure rainfall in India centuries before the beginning of the Christian Era. The receiving vessel of a modern rain gauge is generally ten times greater in diameter than the tube into which the contents are poured for measuring. The gauge is exposed where it will catch about the full amount of precipitation upon the ground

at that particular point. A perpendicular vessel when exposed away from buildings, trees and other interfering objects will collect the average amount of rainfall. All rain gauges, no matter how complicated, are based on this principle. Contrary to popular belief, rain falling straight down will not fill an exposed receptacle more quickly than rain falling at an angle, as when it is accompanied by a wind. The fact that the rain is blown slightly in one direction will not affect the total amount of water falling into the vessel. "The amount of catch," says the United States Weather Bureau, "is independent of the angle or slope of the falling rain," and the United States Bureau of Standards says on this subject: "The effect of gravity (and hence the vertical component of the velocity of fall) is the same no matter what the angle of fall. Hence, if all other conditions except angle be the same, the amount of rain which falls into a vessel will not be affected by the angle of fall, but will remain constant. An angle denotes the presence of wind. In order that the above conclusion may remain valid the wind must not be of sufficient intensity to modify the size of the drops, and, moreover, the wind must be uniform and horizontal. Gusts may modify the result in either direction." Precipitation in the form of snow, sleet and hail is melted, reduced to the equivalent in rainfall, poured into a rain gauge, measured, recorded and included with rain in determining the amount of precipitation during the year or other period of measurement. As a general rule about ten inches of snow is required to make one inch of water.

Do snakes digest hen eggs without breaking the shells?

Many species of snakes eat hen eggs by swallowing them whole; in fact that is the only way the snakes could eat them. Generally the eggs are broken by constriction soon after they are swallowed, although they would undoubtedly be digested in time by the powerful juices of the snake's stomach even if the shells were not crushed. The coachwhip snake, the black snake, the fox snake, the corn snake, the pilot snake, the pine snake, the bull snake, the gopher or indigo snake and the king snake are among the common American species that are known to eat hen eggs. Poultrymen sometimes get rid of egg-stealing snakes by placing artificial eggs where the reptiles will find them. As a rule snakes do not distinguish between artificial and genuine eggs and they will swallow glass or porcelain nest eggs as readily as they will real eggs. A glass egg cannot pass through the snake's digestive system and it often proves fatal to the reptile. Several cases have been reported in which snakes have trapped themselves in hen-

houses by swallowing one artificial egg and then crawling part way through a small hole and swallowing another, being unable to move very far either forward or backward because of the two artificial eggs within the body. Birds' eggs are a favorite food of the bull snake. An egg, after being swallowed whole, passes twelve or fourteen inches into the reptile's body where the shell is crushed by muscular contraction and is digested with the rest of the egg. The pine snake, after swallowing an egg, lifts its head, elevates its back and exerts a downward pressure on the egg until the shell is broken. Members of the genus *Dasypheltis*, little harmless constrictors native to tropical Africa and America, are known specifically as egg-eating snakes because they feed largely on the eggs of small birds. Bony protuberances in the throat split the shell longitudinally and release the contents of the egg, after which the shell and its inner lining are ejected from the snake's mouth.

What is the Kremlin in Moscow?

Kremlin is the French form of *kreml*, a Russian word of Tartar origin, and literally signifies "citadel" or "the fortress of a city." Many Russian cities, such as Novgorod, Suzdal and Vladimir, have kremlins, and the remains of the kremlins of many medieval cities in Russia have been unearthed by archaeologists, but the largest, the best preserved and the most famous is at Moscow and it is "the Kremlin" par excellence. Originally kremlins were wooden stockades in towns to protect the public buildings and inhabitants from Tartars and other marauders. The Moscow Kremlin is not a single structure but a walled space about a mile and a half in circumference and some sixty acres in area. It is roughly triangular in shape and lies near the heart of the city on a hill overlooking a loop in the Moscow River, a tributary of the Volga. The brick walls range from twelve to fifteen feet in width and from thirty to fifty feet in height. This wall is pierced by five gates and is surmounted by battlements and towers, the tallest of which is 275 feet high. Within the Kremlin are palaces, cathedrals, churches, convents, museums, barracks and government buildings—about forty in all. The present wall replaced a twelfth-century oak stockade built during the reign of Ivan III (the Great), Grand Duke of Muscovy from 1462 to 1505. Two Italian brothers, Maron and Pietro Antonio, constructed the first two important buildings in the Kremlin during the same reign. Many towers were added during the reign of Ivan IV (the Terrible), who was grand duke from 1533 to 1547 and czar of Russia from the latter

year until 1584. There were also later additions. The Kremlin was not damaged by the fire that destroyed much of Moscow while Napoleon and his army were there in 1812. Damage done to the walls when the Kremlin was bombarded by the Bolsheviki during the 1917 revolution had been repaired when they were again somewhat damaged by the Germans during the Second World War. *The Kremlin* is used figuratively to designate the Russian government. Although some of the higher Russian officials reside within the inclosure, the Kremlin is now little more than a show place, and most government activities are carried on outside it. The earliest use of *Kremlin* in English recorded by the Oxford dictionary is dated 1662. In 1553, when Ivan the Terrible was czar of Russia and Edward VI was king of England, Richard Chancellor, sailing on *The Admiral*, made the first trip by an Englishman to Russia. Richard Hakluyt in 1589 published an account of Chancellor's trip under the title *The Discovery of Muscovy*, and in that work we have the earliest account of the Kremlin by an Englishman: "There is hard by the city (Moscow) a very fair castle, strong, and furnished with artillery, whereunto the city is joined directly towards the north with a brick wall; the walls also of the castle are built with brick, and are in breadth or thickness eighteen feet. This castle hath on the one side a dry ditch, and on the other side the river Volga, whereby it is made almost impregnable. . . . In the castle aforesaid there are in number nine churches or chapels, not altogether unhandsome, which are used and kept by certain religious men, over whom there is, after a sort, a patriarch or governor, and with him other reverend fathers, all which for the greater part dwell within the castle."

Who are one's kith and kin?

Kith and kin is now regarded merely as a pleonastic phrase meaning "relatives and kinfolk." The first element in the phrase is an old English word that survives only in this connection. It is derived from Anglo-Saxon *cunnan*, "to know." The past participle of *cunnan* was written variously *cyth*, *cuth*, *cith* and *kith*, and the underlying thought of *kith* is "known" or "familiar." In Old English it came to signify known country, familiar territory, fatherland or native land. Later it was extended to one's countrymen, the people known to him, his friends, acquaintances, associates and neighbors. *Kin* means "relative" or "related." Thus *kith and kin* came to signify one's acquaintances and relations. *Kin* occurs many times in Shakespeare and the King James Version of the Bible but, oddly enough, *kith* does not occur once.

Uncouth and *kith* are related in origin. *Cuth*, like *kith*, literally means "known," and *uncouth* originally meant "unknown" or "strange." In Shakespeare we find "uncouth forest," "uncouth fear" and "uncouth ill event." *Kith and kin*, like many other phrases of the same type, survives chiefly because it is alliterative.

Are there real mermaids?

Mermaids are mythical beings of the sea with the form of a woman above the waist and that of a fish below. According to mythology, these womanlike fish were allied to the sirens and had great personal charms with which they lured amorous men to destruction in the deep. The first element in *mermaid* is from *mere* (Latin *mare*), "sea," and the term literally means "sea maid." In Shakespeare's *A Midsummer-Night's Dream*, Oberon, king of the fairies, says:

Once I sat upon a promontory,
And heard a mermaid on a dolphin's back
Uttering such dulcet and harmonious breath
That the rude sea grew civil at her song
And certain stars shot madly from their spheres,
To hear the sea maid's music.

Many of the stories about mermaids were probably invented by sailors to amuse their families. It is not uncommon to find credulous people even today who believe in the existence of mermaids, and fake mermaids are frequently exhibited at circuses and other shows. The physical basis of the myth perhaps lies in the fact that some marine animals faintly resemble human beings when seen at a distance in certain attitudes. Seals, for instance, have a way of lifting their heads from the water with a human, intelligent look in their faces, and the females hug their young to their bosoms much like human mothers. When Henry Hudson was on a voyage between Spitsbergen and Nova Zembla in 1608, he reported that one June morning two of his sailors saw a mermaid who came close to the ship's side and gazed at them intently. Her face and breasts, wrote Hudson, were those of a woman, but below she was a fish as big as a halibut and colored like a speckled mackerel. If the sailors were not spinning a yarn to amuse their credulous captain it is probable that what they saw was a seal, an animal then little known to many Europeans. A few years later Captain Richard Whitbourne reported seeing a mermaid in St. John's harbor on the Newfoundland coast. Whitbourne, like Hudson's sailors, was no doubt the victim either of careless observation or of an over-

energetic imagination. Walruses seen dimly at a distance might also appear like mermaids. Some authorities believe the mermaid myth was originally suggested by members of the order Sirenia, which includes the dugongs, manatees and sea cows. These strange marine mammals live in coastal waters around Florida, the West Indies, South America, Africa, Australia and elsewhere. They have dog-shaped heads and feed exclusively on vegetable matter. The female dugong sometimes gives the effect of a mermaid as she floats upright in weedy shallows along the coast and holds her young to her breast with one of her flippers, suggesting a human mother and her baby. When disturbed she suddenly dives into the water and tosses up her fishlike tail. Washington Irving, referring to the first Columbus expedition in 1492, wrote: "Columbus also mentions in his journal that he saw three mermaids, which elevated themselves above the surface of the sea, and he observes that he had before seen such on the coasts of Africa. He adds that they were by no means the beautiful beings they had been represented, although they possessed some traces of the human countenance. It is supposed that these must have been *manati* or sea-calves, seen indistinctly and at a distance; and that the imagination of Columbus, disposed to give a wonderful character to everything in this new world, had identified these misshapen animals with the sirens of ancient story."

How did *honeymoon* originate?

Many writers suppose that *honeymoon* originally referred to the moon or month after marriage when the ancient Teutons celebrated by drinking a liquor made of honey. In *Etymological Compendium* (1828) William Pulleyn wrote: "It was the custom of the higher order of the Teutones, an ancient people who inhabited the northern parts of Germany, to drink mead, or metheglin, a beverage made with honey, for thirty days after every wedding. From this custom, comes the expression, *to spend the honey moon*." Attila the Hun died suddenly in 453 A.D. during the night following a banquet celebrating his marriage to a damsel named Ildico, and since the king was notorious for his intemperance it is supposed that his death was due to overindulgence in honey mead at his wedding feast. Dr. Samuel Johnson apparently had some such theory in mind when he defined *honeymoon* as "the first month after marriage, when there is nothing but tenderness and pleasure." However, the early examples given by the Oxford dictionary indicate that the term originally may have had no reference to the period of a moon or month, but rather

compared the mutual love of newly married people to the changeable character of the moon, which is no sooner full than it begins to wane. In 1552 Richard Huloet said in his dictionary: "Honey moon, a term proverbially applied to such as be new married, which will not fall out at the first, but the one loveth the other at the beginning exceedingly, the likelihood of their exceedingly love appearing to assuage, the which time the vulgar people call the honey moon." The custom of the honeymoon probably symbolizes the primitive practice of stealing the bride and concealing her from her people. Nowadays the honeymoon is merely a vacation that newly married couples take before settling down.

Can a moving object reverse its course without stopping?

No moving object can reverse its course completely without first coming to a standstill. A bullet fired or a ball thrown straight up into the air stops for an infinitesimal period before it begins to descend. The piston of an engine stops for an instant at the top and bottom of each stroke. Suppose a rifle bullet is traveling in one direction and that it meets and is carried back by a cannon ball traveling in the opposite direction. Does the rifle bullet stop completely in reversing its course to travel back with the cannon ball? The fact is that the rifle ball will have to stop a theoretical instant before starting in the opposite direction, notwithstanding the fact that the cannon ball continues on its original course. In theory the cannon ball would be slowed up slightly.

Why is *Dutch* used in so many English phrases?

Dutch occurs in scores of English phrases and sayings and almost always in a derogatory sense. It is the English form of Netherland *Duitsch* and German *Deutsch*, the root of which denotes "popular" or "national." The English applied *Dutch* to all Teutonic peoples until about 1600, when the term began to be restricted to Hollanders. Expressions containing *Dutch* in a disparaging sense are rare in Elizabethan literature but begin to be common in the literature of the Stuart period. Many of them originated during the seventeenth century when England and Holland were keen rivals for sea supremacy, commerce and colonial possessions and were occasionally at war. The two peoples were more in each other's minds at that time than ever before or since. In England *Dutch* became synonymous with everything objectionable, false, mean and laughable, and it was considered smart to coin expressions derogatory to the Dutch. Many

of the belittling and derisive "Dutch" phrases and sayings date from that period, while others were coined later on the same principle. In fact the process still goes on without any thought of injuring the people to whom *Dutch* was originally applied. Proverbially Dutchmen (Hollanders) were stolid, stupid, pigheaded, cowardly, hard-drinking and sharp-dealing. Earlier the Dutch had been called "the Chinese of Europe" in a favorable sense. Robert Burton in the preface to *The Anatomy of Melancholy* (1621) referred to the Netherlands as "our Indies, an epitome of China, and all by reason of their industry, good policy, and commerce." But in 1665, after the Dutch and English became enemies, Edmund Waller, in *Instruction to a Painter for a Picture of the Victory over the Dutch*, wrote:

The Dutch their wine, and all their brandy lose,
Disarmed of that from which their courage grows.

This is the first hint of *Dutch courage*, that is, "pot-valor" or courage induced by drinking Holland gin or other ardent spirits. As late as 1821 George Canning, in a dispatch to the British minister at The Hague, wrote:

In matters of commerce the fault of the Dutch
Is offering too little and asking too much.

Some of the "Dutch" phrases are downright contemptuous; others suggest little more than the strange, unusual or exotic. To the English the Dutch language meant discordant sounds, ludicrous noise, mere gibberish. *Double Dutch* is deceptive speech. Undesirable relations are Dutch uncles. *To talk like a Dutch uncle* is to reprove a person sharply and bluntly without mincing words. *To do a Dutch* is to desert, and *to do the Dutch* is to commit suicide. *I'm a Dutchman* expresses utter incredulity, and *I'm a Dutchman if I do*, definite refusal. *The Dutch have taken Holland* is equivalent to "stale news," a statement of the obvious or something told as news that is already known. Something remarkable is said *to beat the Dutch*. A *Dutch treat* is an entertainment at which each person pays for his own amusement and food. A *Dutch lunch* or *supper* is one at which each person brings or pays for his own food. On *Dutch dates* young couples pay their own expenses. Those who participate in Dutch treats, meals or dates are said *to go Dutch*. A feast at which the host gets drunk before his guests do is a *Dutch feast*. When a person exhibits pigheadedness his *Dutch is up* and when he is in disfavor or disgrace he is *in Dutch*. A *Dutch wife* may be either a clock or a pillow, especially the

pillow of a man in the tropics who does not take a native woman. *Dutch defense* is a retreat or a premature and cowardly surrender. *Dutch luck* is undeserved good fortune, and *Dutch praise* is condemnation in the guise of praise. *Dutch comfort* or *consolation* is telling a person things might be worse. A frog is a *Dutch nightingale*. Sailors call something important left behind a *Dutch anchor* from the story of a Dutchman who lost his ship because he forgot to take his anchor on the voyage. A small patch of blue sky seen through storm clouds denotes breaking up of a gale and by mariners is called *Dutchman's breeches* because it is just enough to make a pair of breeches for a Dutchman. A *Dutch row* is a trumped-up argument or wrangle, and a *Dutch concert* is a din or uproar such as might be made by a party of drunken Dutchmen singing out of tune and playing musical instruments in different times. *Dutch reckoning* is guesswork, a *Dutch bargain* is a "wet deal" made by persons drinking together, and a *Dutch auction* is a sale at which the seller offers goods at a high price and gradually reduces the price until he finds a buyer.

Does the wind ever shift directly from east to north?

Many people believe that the wind never shifts from north to east and back to the north again without veering around by way of the south and west. It is a fact well known to meteorologists that the wind very seldom veers from the north to the east and then, without further shift, back from east to north. But, according to the United States Weather Bureau, such changes can and sometimes do occur. "In fact," asserts that authority, "such are the necessary changes in wind directions whenever the center of a barometric *high* or *anti-cyclone* passes on its eastward course north of the observer, followed by a barometric *low* or *cyclone* passing eastward with its center south of the observer. This is because winds always flow spirally clockwise out from the center of an anticyclone, and spirally counterclockwise in towards the center of a cyclone."

What is meerschaum?

Meerschaum is a claylike mineral used in making tobacco pipe bowls and cigar and cigarette holders with mouthpieces of amber. It is a form of hydrous magnesium silicate and is composed of water, magnesia and silicate. Meerschaum is smooth and soaplike in feel, removes grease readily and is sometimes used as a substitute for soap in Turkey and North Africa. At Vallecas, Spain, meerchaum is mined

for use as a light, tough building material. The substance in various forms has been found in beds in Asia Minor, the Crimea, Moravia, Greece, France, Spain, Morocco, Pennsylvania, South Carolina, Utah and New Mexico. *Meerschaum* is derived from German *Meer*, "sea," and *Schaum*, "foam," and is a literal translation of Persian *kef-i-darya*, "foam of the sea," perhaps referring originally to the frothy appearance of meerschaum when first removed from the earth. The French name, *écume de mer*, means the same thing. Dried meerschaum floats in water and this fact gave rise to the popular story that the ancients first found meerschaum floating on the Black Sea and supposed it to be "petrified sea foam." A poetic name of the substance is Aphrodite, after the Greek goddess of love and beauty, whose name (from *aphros*, "foam") was suggested by the myth that she sprang from the foam of the sea. Scientifically it is called sepiolite, because it was thought to resemble the bone of the sepia or cuttlefish. Deposits of meerschaum on the plains of Eskishehir in Asia Minor have been worked for a thousand years. For centuries about a thousand men have been engaged in taking raw meerschaum from pits and galleries twenty-five or thirty feet below the surface of the ground. Formerly the Turks believed that "meerschaum and women do not mix" and forbade any woman to live in the score of villages around the meerschaum mines. When first taken from the ground meerschaum is grayish white in color with a tinge of yellow or red, and the blocks are soft enough to be cut with a knife like cheese. After being scraped the blocks are dried in the sun for a week and then polished with wax. According to tradition, smoking pipes were first made of meerschaum about 1723 by Karol Kowates, a Budapest shoemaker and wood-carver, who used some crude meerschaum picked up by Count Andrassy while on a mission to Turkey and taken to Hungary as a curiosity. For two centuries the Austrians and French excelled in making pipes from meerschaum imported from Turkey. A meerschaum pipe is not considered a finished product until it has been "broken in" and "colored" by an experienced smoker. The material is very absorbent and a pipe bowl made of waxed meerschaum turns an attractive brown with continual use.

Does any species of fish swim upside down?

A catfish, *Synodontis batensoda*, and related species common to the Nile and other African rivers and lakes have the remarkable habit of normally swimming and floating upside down. No other known fish assume this position in the water for extended periods unless they

are sick or dead. Puffers or globefish and porcupine fish sometimes float upside down while inflated, and the shrimpfish or needlefish of the Indian Ocean do so occasionally. The globefish often inflates itself and swims upside down when frightened. Individual specimens of the common goldfish have been observed to swim on their backs. The Nile catfish must have acquired its habit of swimming upside down a long time ago, because it is depicted in that position in ancient Egyptian works of art and because it has developed a light back and a dark belly, which is the reverse of the usual color scheme in fish.

Why is it regarded as lucky to find a four-leaved clover?

A four-leaved clover is one that contains four leaflets instead of the normal three. The superstition that the finding of such will bring good luck is very old. In *Astrologaster* (1620) Sir John Melton wrote: "That if a man, walking in the fields, find any foure-leaved grasse, he shall in a small while after find some good thing." According to an old English rhyme:

When sitting in the grass we see
A little four-leaved clover,
'Tis luck for thee and luck for me,
Or luck for any lover.

And another runs:

An even-leaved ash,
And a four-leaved clover,
You'll see your true love,
'Fore the day is over.

Longfellow, in *Evangeline*, speaks of "the marvelous powers of the four-leaved clover." This belief is not limited to English-speaking countries. It exists throughout Europe. "He has found a four-leaved clover" is said proverbially in Germany of a lucky person. There are many refinements and elaborations of the superstition. In some countries, for instance, many people believe that the four-leaved clover, to be potent as a good luck charm, must be plucked on Midsummer Eve, the period near the summer solstice. This fact has led some writers to suppose that the four-leaved clover belief originated with the druids or the ancient sun worshippers, who gathered clover and other "plants of magic power" at the summer solstice. Plants undoubtedly played an important part in the druidic worship and magic,

and since clover leaves with four leaflets were comparatively rare the priests may have attached especial importance to them. One theory is that the superstition arose from the fact that the four-leaved clover somewhat resembles the Christian cross in the arrangement of the leaflets and that therefore the finding of such an emblem endowed the finder with special virtue and the gift of detecting and warding off evil spirits. But the true origin of the four-leaved clover as a good luck charm has been lost in antiquity and probably is past recovery. Many people think the four-leaved clover is mentioned in the Bible and ask for the book and chapter of the following alleged verse: "Lucky is the one that finds a four-leaved clover, but cursed is the finger that plucks it." Needless to say, there is no such verse, and the four-leaved clover, or indeed any kind of clover, is not mentioned in the Bible. There is no species of four-leaved clover. All species of *Trifolium*, including red clover, white clover, alsike clover and several other species, produce individual plants that have a tendency to produce leaves with four or more leaflets. The tendency is particularly pronounced in white clover, *Trifolium repens*, the small creeping white-flowered species common in pastures and lawns. The leaves with more than three leaflets are mutants or sports and will not reproduce true to type from seed, but they can be propagated to some extent by cuttings. A single white clover cutting has produced patches in which 10 percent of the leaves contained more than the normal three leaflets. Plants bearing leaves with 3-4-5-6-7-8-9 leaflets have been grown. Twelve has been the largest number of leaflets on a single leaf reported. Hundreds of four-leafers have been found in patches of wild clover only a foot square. On the other hand, the great majority of plants of all the species of clover show no tendency to depart from the normal three-parted arrangement of the leaf. Some keen-eyed persons seem to have a special faculty for finding four-leaved clovers. In 1924 a dairy company at Memphis, Tennessee, whose trade-mark was a four-leaved clover, advertised a Four-Leaved Clover Week and offered a pint of ice cream to each person who presented a four-leaved clover at the company's office. On the first day more than 50,000 four-leaved clovers were presented and the distribution was called off because of an ice-cream shortage.

Who taught the greatest happiness of the greatest number?

In 1720 the English philosopher Francis Hutcheson, in his *Inquiry into the Original of our Ideas of Beauty and Virtue*, wrote: "That action is best which procures the greatest happiness for the greatest

numbers; and that worst, which, in like manner, occasions misery." This is the earliest known use of the phrase in question. It was employed in the form now quoted by the Italian publicist Cesare Beccaria in his *Treatise on Crimes and Punishments*, first published in 1764. Later Jeremy Bentham, the English political philosopher, wrote: "Priestley was the first (unless it was Beccaria) who taught my lips to pronounce the sacred truth—that the greatest happiness of the greatest number is the foundation of morals and legislation." The general idea conveyed by the phrase is found in the writings of the ancients, notably Democritus.

How are lightning prints on the skin produced?

Lightning prints is commonly applied to pinkish marks left on the skin of a person struck by lightning. The patterns may resemble all sorts of objects, such as trees, leaves, ferns, ships, animals, birds, fishes and even human beings. It used to be supposed that the action of lightning was photographic and that in some mysterious manner it left pictures of neighboring objects upon the body. This belief probably arose from the fact that many persons are struck while taking shelter under trees and the most common pattern of the lightning prints is that of a tree or the venation of a leaf. A more fantastic belief is that the lightning first passes through the tree or other object and then prints upon the person struck an exact figure of the object passed through. In *The History of the Dividing Line* Colonel William Byrd of Westover wrote:

But of all the Effects of Lightening that ever I heard of, the most amazing happen'd in this country, in the Year 1736. In the Summer of that year a Surgeon of a Ship, whose Name was Davis, came ashoar at York to visit a Patient. He was no sooner got into the House, but it began to rain with many terrible Claps of Thunder. When it was almost dark there came a dreadful Flash of Lightning, which Struck the Surgeon dead as he was walking about the Room, but hurt no other Person, tho' several were near him. At the same time it made a large Hole in the Trunk of a Pine Tree, which grew about Ten Feet from the Window. But what was most surprising in the Disaster was, that on the Breast of the unfortunate man that was kill'd was the Figure of a Pine Tree, as exactly delineated as any Limner in the World could draw it, nay, the Resemblance went so far as to represent the colour of the Pine, as well as the Figure. The Lightning must probably have passed thro' the Tree first before it struck the Man, and by that means have printed the Icon of it on his breast. But whatever may have been the cause, the Effect was certain, and can be attested by a Cloud of Witnesses who had the curiosity to go and see this Wonderful Phenomenon.

Scientists now know that the contour of lightning prints is merely a freak of nature. The effects of direct lightning stroke on the body are not unlike those produced by large quantities of electricity at high voltage and the most characteristic form of injury is some sort of burn. Such burns may consist of lesions produced by the passage of a branching electrical discharge through the tissues, and it is merely a coincidence if the mark left resembles a tree, leaf, fern, ship, animal or human body. Some of the pranks played by lightning are most remarkable. There is nothing improbable in the report that the initials from his hatband were burned on the forehead of a man struck by lightning. In such a case the outline of the burn might be governed by the heated hatband tight against the skin.

What are sea legs?

When a person is able to walk on the deck of a rolling ship and to stand the motion of the vessel without getting seasick he is said to have his "sea legs," a phrase borrowed from the cant of seamen. Many people, even frequent sailors, have difficulty in keeping their balance when starting out to sea and require a day or two to get their sea legs, that is, to readjust themselves to the motion of the vessel in walking. The phrase is sometimes applied humorously to intoxicated persons. In a similar way a person who has been on shipboard often requires a day or two to get his "land legs."

Of what region is the pineapple native?

The pineapple is believed to have been indigenous to tropical South America. A wild plant growing in the upland forests of Brazil and Paraguay may have been its progenitor. This fruit was first seen by Europeans when Columbus on his second voyage in 1493 touched at Guadeloupe in the West Indies. Chroniclers of the voyage wrote that the Spaniards were astonished and delighted by the fragrance and flavor of the strange "pine fruit," which apparently was not found in the Greater Antilles or on any part of the North American mainland. In 1502, while on his fourth and last voyage, Columbus found pineapples growing along the coast of Central America. These pineapples, though delicious in flavor, were woody and acid and no larger than walnuts. The natives made a beverage with a vinous flavor from pineapple juice. "In shape and color," the chroniclers wrote, "this scale-coated fruit resembles the pine cone," and thereafter they called it "the pine of the Indies." About 1604 the English began to call this fruit *pine-apple*, the Anglo-Saxon name for the cone of

the pine tree. *Ananas*, the botanic name, comes from its Carib Indian name and literally signifies "excellent fruit." When a pineapple was presented to Emperor Charles V he refused to taste the "barbaric fruit." Horticulturists greatly improved the pineapple in size and quality and its cultivation rapidly spread to many parts of the world for both ornamental and food purposes. It belongs to the Bromeliaceae and is closely related to Spanish moss. Like that aerial plant it derives much of its nourishment from the air. The pineapple became a favorite fruit in the United States at an early date. In *A Description of the District of Columbia*, published in Paris in 1816, David Baillie Warden wrote: "Two of the luxuries of life, pineapples and ice, are found at Washington at a cheap rate. The former, imported from the West Indies, are sold at 25 cents each." In continental United States pineapples are produced commercially only in Florida, where they were introduced about 1850. Eighty percent of the world's pineapple supply is produced in Hawaii. Some authorities suppose pineapples were indigenous to the Hawaiian Islands, but it is probable they were introduced there for ornamental purposes in the eighteenth century. According to one legend the plant was first brought to Hawaii by shipwrecked Spaniards from Mexico, and according to another the plant was washed ashore among the provision of a sinking whaling vessel. Captain John Kidwell, whose hobby was plant breeding, settled near Honolulu in 1882 and began to improve the pineapples then grown on the islands. In 1896 a million pineapple plants were imported from Australia for breeding purposes. James Dole laid the foundation of the present Hawaiian pineapple industry in 1901. Pineapples are almost seedless and are grown from slips, not seeds. The few seeds produced are used only in developing new varieties. In the Philippines a delicate and costly vegetable fiber known as piña or pineapple cloth is made from the spiny and tough leaves of pineapple plants.

What is the principle of the thermos bottle?

The thermos bottle or vacuum flask consists essentially of a glass container and double walls enclosing a partial vacuum. Heat escapes from or enters into ordinary closed vessels by means of conductivity and radiation and it is conducted through the air by the movements of the molecules. When the space between the walls of the vessel, especially when the vessel is composed of a substance like glass, is partially exhausted of air the conductivity is greatly reduced. In fact an approximate vacuum between the walls of the glass becomes vir-

tually a nonconductor of heat. The only place where the inner and the outer walls of the thermos flask join and provide a path for the communication of heat from one to the other is at the neck, which is therefore made as small as practical. Highly reflecting surfaces are poor radiators of heat. That is why the walls of the thermos bottle are silvered. The silvered walls and the partial vacuum combined retard the inflow and outflow of heat to such an extent that the contents of the vessel remain either cold or hot for a considerable period irrespective of the temperature of the surrounding atmosphere. The principle of the thermos bottle was discovered about 1892 by Sir James Dewar (pronounced *DEW-ar*), British chemist and physicist, who designed the vacuum-jacketed vessels for storing gases after he had liquefied them. These flasks, known at first as Dewar bulbs, proved to be very effective for preserving liquefied gases by preventing the influx of external heat. *Thermos* is merely the Greek equivalent of "hot" and *Thermos* bottle or flask originated as a trade-mark for a vacuum-jacketed vessel of this type.

Why are longshoremen so called?

Longshoreman is a corruption of *along-shore-man*. Stevedores (from Spanish *estivador*, "packer") were called along-shore-men because they were employed about the wharves of seaports to load and unload vessels. *Docker* is the usual name applied in Britain to persons engaged in loading and discharging ship cargoes.

Do doves have galls?

In *Hamlet* Shakespeare makes the Prince of Denmark say, "I am pigeon-livered and lack gall." The gall bladder is present in most vertebrates, including birds, but it is absent from all doves and pigeons. It is a sac in which the bile secreted by the liver is stored until required for use in the digestive system. Doves and pigeons, however, do produce bile (or gall) in their livers. They differ from most other birds and animals in having no gall bladder in which to store it. The bile is a bitter fluid and the ancients believed that the gall bladder was the seat of bitterness, grief and bad temper. Thus the absence of the gall bladder in the dove, combined with the reputed inoffensive nature of this bird, led to its selection as the symbol of meekness and the emblem of peace. No member of the pigeon family, according to legend, has had a gall since the dove sent from the ark by Noah burst its gall out of grief. The dove, as a type of gentleness and harmlessness, plays an important part in Christian symbolism. Matthew 3:16 says: "And Jesus,

when he was baptized, went up straightway out of the water: and, lo, the heavens were opened unto him, and he saw the Spirit of God descending like a dove, and lighting upon him." When Jesus sent forth his twelve disciples, according to Matthew 10:16, he told them to be as "harmless as doves." Doves and pigeons, however, are not so peaceful as they have been painted. As a rule they are inoffensive toward other birds and other creatures, but they are quite pugnacious and quarrelsome among their own kind. During the breeding season they often engage in fierce fights. In Shakespeare's *III King Henry VI* Clifford says that "doves will peck in safeguard of their brood." The ground dove is far from being "as gentle as a dove." Members of this species do not hesitate to attack other birds that they suspect of trying to deprive them of their food, and often they engage in battles among themselves, although apparently none of them ever gets hurt. Doves, particularly turtledoves, are proverbial for their connubial constancy and affection. In the introduction to his *Fables* (1726) John Gay wrote:

In constancy and nuptial love
I learn my duty from the dove.

This notion of these birds as the perfect models of conjugal bliss was probably suggested by the fact that they have a soft cooing voice, have subdued colorings, mate for more than one season in succession and are most frequently seen in pairs.

What are dew ponds?

Dew pond is the name applied to certain shallow saucer-shaped basins that usually contain a supply of water even during prolonged droughts when ordinary ponds at lower levels dry up. The mode of replenishment is somewhat mysterious because the most successful dew ponds are situated on the highest points of the chalk downs of southern England, where the soil is extremely porous, where there are no springs, where evaporation proceeds more rapidly than in the valleys, and where many cattle and sheep consume large quantities of the water daily. They received their common name from the belief that they are replenished chiefly by the deposit of dew on the surface of the water, a belief that probably arose from the fact that during the hottest weather the vegetation in the vicinity of such ponds is often thickly covered with dew after nightfall. Scientists who have investigated the subject report that dew has little if anything to do with the mysterious replenishment of the ponds during droughts. It is believed that they receive water from downland fogs and mists from the sea,

in addition, of course, to the regular supply from rain. That fog or mist is the source of some water is confirmed by the fact that the ponds contain considerable quantities of sodium chloride and other salts. This theory would also explain why those ponds on the highest points of the chalk downs are usually the last to dry up during a drought. Apparently the ponds have the power of attracting water from the mists, fogs and low clouds, and accordingly in some sections of England they are known as "mist ponds," "fog ponds" and "cloud ponds." It is commonly believed by the people on the downs that dew ponds were made in prehistoric times. Certainly some of the ponds still in existence date back many generations. Even at the present time they are constructed according to traditional principles. The essence of the typical dew pond is its waterproof bottom, which is made by puddling clay tempered with chalk or lime. Sometimes layers of straw are elaborately laid beneath the puddled clay bottom, but the purpose and value of this feature is a disputed question among the pond builders themselves. Usually a layer of loose chalk rubble is placed over the clay to prevent cattle from perforating the bottom with their hoofs. As a rule the pond is filled the first time by artificial means.

Does the murderer's image remain in his victim's eyes?

Since time immemorial there has been a popular belief that the last object seen by a person when dying leaves a permanent image in the eyes of the corpse. Numerous writers have held out the hope that examination of the eyes of the victims of murder may prove of assistance in identifying the murderers as well as in obtaining evidence in other cases of death by violence. Rudyard Kipling's *At the End of the Passage* is based on the notion that the image of the murderer is recorded on the retina of the victim's eye, and such identification often figures in detective stories and in novels. In 1925, according to a typical report on this subject, the police of the village of Haiger in Germany used photographs of the eyes of the victim in a murder case. A man named Angerstein was charged with several murders, and while examining one of the victims in the morgue the coroner noticed an image in the open eyes of the corpse. Photographs of the eyes, the report stated, revealed plainly an image of Angerstein with an ax raised to strike. Professor Bohne, a scientist at Cologne University, expressed the opinion that the report might have some basis in fact. The eye is much like a photographic plate. In fact it is a miniature camera, but more perfect and adaptable than the mechanical instruments used by photographers. At the back of

the eye is the retina, a sort of screen for receiving images analogous to the plate or film of a camera. Perfect images are formed on the retina, but they are not permanent. They remain only so long as the eye remains open or the gaze is fixed on a particular field of view. Suppose, said Professor Bohne, the case of a murderer who kills his victim with a deadly weapon. The image of the advancing murderer is reflected in the eyes of the victim. Under such nerve shocks, the scientists suggested, the nerve centers of the eyes might lose their power to form new images, with the result that if the person died at such a moment the reflection might remain fixed in death. Scotland Yard had previously investigated this theory and concluded that it is fallacious. Scientists generally scout the idea because all experiments thus far made point clearly to the conclusion that the retina without artificial aid is incapable of permanently registering images. It is probable that images could be fixed on the retinas of a dead person's eyes by the application of chemicals immediately after an "exposure." As a matter of fact Professors Kuehue and Boll, of Heidelberg and Vienna respectively, fixed images on the retinas of the eyes of rabbits by exposing them to strong light for a short time after death and then treating the retinas with alum. Somewhat similar results were obtained by other scientists who used the eyes of frogs. But the fascinating possibility that the murderer may be identified by an examination of the eyes of his victim is very remote.

Why is a clever man referred to as being longheaded?

Phrenologists, those who believe that the character and mental ability can be judged by means of the shape and bumps of the head, maintain that a long head is an indication of sagacity and shrewdness. Hence a sharp-witted person is said to be longheaded. There is an interesting reference to this subject in Shakespeare's *Macbeth* where King Duncan says of the traitor Cawdor:

There's no art
To find the mind's construction in the face;
He was a gentleman on whom I built
An absolute trust.

How did "By the great horn spoon" originate?

It is believed that this humorous and apparently meaningless oath originally referred to the large horn spoons common a century or two ago. Spoons made of the horns of cattle and sheep were common in Scotland as late as the latter part of the nineteenth century, and such

utensils were widely used in Colonial America. The Scotch of a former generation ate their porridge with huge horn spoons, while the colonists in the New World used similar spoons with which to ladle soft soap and apple butter. Even the American Indians made spoons from the horns of buffalo or bison, and similar spoons made of the horns of bison and Rocky Mountain sheep were used by the early placer miners to separate gold from sand and crumbled ore. "By the great horn spoon" seems to be of American origin and there is something about the phrase suggesting that it may have originated among seafaring people. It is more than likely that the cook's galley of every vessel in Colonial days was provided with a supply of horn spoons for ladling out soup, porridge and similar food to the seamen. Sailors are fond of inventing all sorts of humorous oaths and expletives based on the objects most familiar to them. One theory is that American seamen at one time referred to the constellation known as the Big Dipper (Ursa Major, "Great Bear") as the great horn spoon and that the humorous oath originally alluded to this constellation and not to a horn spoon in the literal sense. It would be only natural for seamen to swear by the constellation that they used to locate the North Star. But there is no etymological evidence to support this theory. In 1848 James Russell Lowell wrote in No. 5 of the *Bigelow Papers*:

Sez Mr. Foote,
"I should like to shoot
The holl gang, by the great horn spoon!" sez he.

But in 1853 the following appeared in the February number of the *Knickerbocker Magazine*: "'By the horn spoons!' repeated the skipper suddenly." There *spoons* could hardly allude to the Big Dipper.

How did the Ferris wheel gets its name?

The amusement device known as the Ferris wheel was named after its designer, George W. G. Ferris (1859-1896), American engineer and railroad and bridge builder, who was born at Galesburg, Illinois. Ferris organized an engineering firm with headquarters at Pittsburgh, where he lived after 1885. His imagination was fired when Daniel H. Burnham, chief of construction for the World's Columbian Exposition in Chicago in 1893, challenged the civil engineers of America to design something novel and unusual to rival the Eiffel Tower at the Paris Exposition in 1889. Ferris conceived the idea of constructing a gigantic, power-driven wheel on which to carry people up into the air. His

friends and business associates advised him against the project. The country was in the midst of a business depression and financing such an undertaking was difficult. Even those in charge of the exposition at first regarded the scheme as fantastic and impractical and waited several months before granting Ferris the concession, with the result that the World's Fair had already opened when the Ferris wheel was completed. The novel device, located on the Midway, proved to be the chief attraction at the exposition as well as a profitable investment. Engineers from all over the world admired the daring of its design and the perfection of its construction. The wheel itself, revolving on a stationary axle supported by 140-foot towers, was 250 feet in diameter, 825 feet in circumference and 30 feet wide. This structure, including more than 1,000 tons of steel, weighed 1,200 tons and cost \$300,000. Around the rim of the wheel were 36 "balancing" passenger cars, each with a seating capacity of 40 persons—a total of 1,440. After the exposition the Ferris wheel was operated at North Clark Street and Wrightwood Avenue in Chicago. It was moved to St. Louis and operated at the Louisiana Purchase Exposition in 1904. Then it was sold at auction for \$1,800 and broken up for junk. Since then many Ferris wheels have been built, but none so large as the original.

Can there be a grammatical error?

Some writers insist that *grammatical error* in the sense of *an error in grammar* violates precision and is incorrect, because *grammar* means "in accordance with the principles and rules of grammar" and accordingly an error cannot be grammatical. Likewise *good grammar* and *bad grammar* are often branded as "logical absurdities" for similar reasons. According to this line of reasoning, it is correct to refer to a construction as *ungrammatical* but incorrect to refer to it as a *grammatical error* or as *bad grammar*. The propriety of these phrases, however, is no longer questioned by the majority of good writers and speakers. The objection to *grammatical error* is based on the mistaken notion that the adjective *grammatical* has only one meaning, namely, "in accordance with the principles and rules of grammar." As a matter of fact the word now also means "pertaining to grammar," a sense in which it is used in the phrase under discussion. Language is in a state of constant change and growth and frequently an expression that is erroneous in its inception becomes correct by long usage. The final arbiter of propriety in language is usage, and usage has decreed that the convenient and expressive phrase *grammatical error* means "an error in grammar," for which it is a proper substitute. For more than a

century many writers of high literary standing have qualified grammar as good and bad, or as true and false, and such phrases as *bad grammar* and *false grammar* can no longer be questioned on the ground of either propriety or logic. On this subject Samuel Taylor Coleridge wrote: "Words are used in two ways: (1) In a sense that comprises everything called by that name. For instance, the words *poetry* and *sense* are employed in this manner, when we say that such a line is *bad poetry* or *bad sense*, when in truth it is neither poetry nor sense. If it be bad poetry, it is not poetry; if it be bad sense, it is not sense. The same of *meter*; bad meter is not meter. (2) In a philosophic sense, which must include a definition of what is essential to the thing."

Do fish live at the bottom of the ocean?

Fish and other forms of marine life are found at all depths of the sea, even on the ocean floor in the deepest places known to men, although the number of marine animals and plants diminishes as the water gets deeper and the distance from the land increases. Species that live at the greatest depths in the ocean away from the coasts are known as *abyssal* fish. They are especially adapted to withstand the great pressures encountered at the bottom of the sea. This does not mean that the bodies of deep-sea fish are especially strong. On the contrary the muscles and bones of such species are poorly developed. Their tissues are so uniformly permeated with fluids that the pressure is the same from all directions, both inside and out. When such fish are suddenly brought up from great depths it often happens that their air bladders burst and some of their tissues rupture, because the pressure of the air and gases within them is greater than the pressure without. Deep-sea fish feed on one another and on animal and plant life that falls from above.

Do the northern lights make a noise?

Hundreds of competent persons, including explorers, scientists and travelers, have reported that in the far North a faint but characteristic sound sometimes accompanies brilliant displays of the northern lights when they are close to the ground and when great stillness prevails. Those who have heard the "singing of the northern lights" compare the sound variously to the rustling of a silk dress, the whistling of a sharp squall of wind in the rigging of a ship, the hissing of a sword blade moving rapidly through the air, the crackling of steel sleigh runners on frosty snow and the swishing of a whip. According to many of the reports, the sound increases and decreases as the aurora brightens

and fades and its rhythm is about the same as that of human breathing. It seems that the faint sound is heard only on cold nights when the observer is standing still and listening intently. This curious phenomenon has never been satisfactorily explained. Whether the noise is actually produced by the aurora is a disputed question. Most authorities maintain that the northern lights could not produce a sound audible on the ground, because they are always many thousands of miles in the rarefied upper atmosphere, where conditions approach a vacuum and through which sound could not travel. They believe that the faint noise attributed to the northern lights is actually produced by the sudden freezing of the moisture in the observer's breath. Roald Amundsen, discoverer of the South Pole, heard the "voice of the aurora" in both the arctic and the antarctic and accepted the freezing-breath theory. Others suggest that if a noise accompanies the northern and southern lights, it may be due to small brush discharges of electricity from snow or bushes, somewhat like St. Elmo's fire, which is sometimes seen on elevated objects when the earth's voltage differs considerably from that of the atmosphere.

What is meant by fiddling for worms?

"Fiddling for worms" is the name given to an odd method used by fishermen to induce angleworms to come to the surface. A stake or piece of board is driven into the ground and a rasping or shuddering vibration is produced by drawing an iron bar or a board over it. In a short time earthworms begin to emerge from the earth within a radius of twenty or twenty-five feet of the stake. Similar results are sometimes obtained by merely tapping or hammering on the ground in a place where there are evidences of the presence of worms. An electrical process consists of vibrating the soil by sending a current through two rods connected by wires. Scientists are not agreed as to what causes the worms to emerge from the agitated soil. Earthworms are very sensitive to vibrations in the earth and if they happen to be on the surface the least jar will send them to their burrows. The worms may come to the surface to escape the vibration; or they may, as some authorities suppose, mistake the vibration for that produced by rain. It has been also suggested that the worms may mistake the disturbance for that caused by the burrowing of their worst enemy, the mole. Whether the so-called "fiddling process" is successful depends on the species of worm and the character of the soil. In most parts of the United States it is not successful, although it is often employed by fishermen in parts of Florida and the other Gulf states. There is a popular belief that

certain insect-eating birds, such as robins, tap on the ground with their bills to bring earthworms to the surface. A French writer says: "The large earthworm, or lob-worm, is very much frightened at the mole, and whenever it feels the earth moving, it comes to the surface to escape from this insect-hunter."

Do bees collect wax from flowers?

It is a common mistake to suppose that honeybees collect wax from flowers. Beeswax is a product of digestion and is secreted by the worker bees in the form of tiny scales that appear between the segments on the under side of the abdomen. The notion that bees collect wax from flowers no doubt arose from the fact that many people confuse wax with the pollen that bees collect and carry to the hive in small masses attached to the hairs of the hinder legs. This pollen is used to make "bee bread," a yellowish-brown substance consisting of pollen mixed with honey and stored in the wax cells for use as food for the young bees. Wax produced by bees and certain other insects has many industrial uses. It is employed in making water-resistant polishes, paints, varnishes, leather dressings, waterproof compositions for munitions, airplane parts, canvas, gun lubricants, ski wax, cartridge grease, carbon paper, electric cable installations and many other products. Vegetable waxes obtained from sugar cane, cotton, the Central American shrub known as candelilla and other plants are used as a substitute for beeswax. Paraffin wax is a by-product of petroleum. Normally the United States imports several million pounds of beeswax from Brazil, Portugal, Cuba, Egypt and other countries. Beeswax is added to modeling wax to toughen the mixture. Sealing wax, the resinous composition, plastic when warm, used to seal letters and documents, contained beeswax as originally made in medieval times, but modern sealing wax contains no wax of any kind and is generally made by fusing shellac with turpentine and coloring matter.

Why are newspapers called gazettes?

The first newspapers to be called gazettes were printed in Italy in the sixteenth century. *Gazzetta* was the Italian and *gazette* the French spelling. The early Italian *gazzettas* were single sheets of paper containing a summary of current events, and they were notorious for their untrustworthy information. Giovanni Flori (1553?-1625) referred to the *gazzettas* of his time as "running reports, daily news, idle intelligence, or flim-flam tales that are daily written from Italie." In 1611 Randle Cotgrave defined *gazette* or *gazzetta* as "a bill of news, or a short rela-

tion of the general occurrences of the time, forged most commonly at Venice, and thence dispersed every month, into most parts of Christendom." Such a news sheet was printed at Venice as early as 1536, and thirty years later the Venetian government began to issue an official gazette known as *Notizi Scritte*. Since *gazzetta* was the name of a small coin struck off at Venice in those days, it is generally believed that the news bulletins were so called because one *gazzetta* was the usual price for the privilege of reading them or hearing them read. If this is correct, the name is analogous to that of the New Orleans *Picayune*, which was named from a small coin known as the *picayune*. Another theory, however, has been suggested. *Gazzetta* is also the diminutive of *gazza*, the Italian name of the magpie, which might have been regarded as a suitable name for the first gazette, just as the English are fond of giving periodicals such names as *Chatterer*, *Chatterbox* and *Tatler*. In 1631 Dr. Theophraste Renaudot founded in Paris the *Gazette de France*, which is regarded as the progenitor of the modern French press. At first it was published as a weekly and carried only foreign news brought by courier, but shortly it blossomed out as a daily and included, besides foreign news, advice to the loverlorn, a travel bureau, feature articles by Cardinal Richelieu, King Louis XIII and other notables, and even classified advertisements.

Can the age of a rattlesnake be told by its rattles?

It is generally believed that a rattlesnake acquires a new ring on its rattle each year and that hence the number of rings or *bells* composing the rattle indicates the age of the reptile. That is incorrect. Normally one ring is added each time the snake sheds its skin. Like other snakes, the rattlesnake starts to peel at the head. The reptile crawls through a small opening between rocks or other objects until the loose skin of the head catches and then crawls out of its outer skin. Usually the sloughed skin is turned inside out in the process. Because of its peculiar shape that part of the old skin that covers the cap or "button" on the tail cannot be shed. When the snake sloughs, however, it is loosened and dislodged from its place and moved backward to become an additional ring on the rattle. But snakes do not shed regularly once a year, as commonly supposed. The rattlesnake sheds its skin three or four times a year, usually three. Snakes in good condition shed their skins more frequently than snakes in poor condition. A well-fed rattler may slough three or four times a year, while an ill-fed one may not slough at all in a much longer period. Besides, the rattle seldom contains more than ten or twelve rings because the

vibration at the tip is so great that the terminal rings are soon worn down or broken off. Even if a rattlesnake added a ring regularly every year its age could be determined from the rattles only when it possessed its first ring. When swimming a rattlesnake holds its rattle above water.

Are brown eggs richer than white eggs?

Many people believe that brown eggs are richer and more nutritious than white ones and this popular belief is an important factor in the commercial distribution of eggs. Some years ago a survey made by American poultrymen showed that light-colored eggs were generally preferred by the public in New York City and dark-colored ones in Boston. There is, however, no good reason for supposing that the richness of an egg is related to the color of its shell. Analysis shows that eggs are virtually the same in chemical composition regardless of the color of the shell and that there is no appreciable difference in the food or nutriment content of light-colored and dark-colored eggs. All eggs are designed by nature for developing chicks and they contain a great amount of nourishment in small space. The young of birds and fowl that lay white eggs require as much food while in the shell as do the young of birds or fowl that lay dark eggs. Eggs have a wide range of color, size and shape. Poultry breeders have developed a variety of chickens that lay blue eggs. The edible part of a hen's egg consists roughly of 76 percent water, 13.4 per cent protein, 10.5 fat and 1 percent minerals. By weight the white of the egg accounts for about 58 percent, the yolk about 32 percent and the shell about 10 percent. The white is composed of about 87 percent water, 12 percent protein and 1 percent fat, sugar, minerals and other substances. The yolk is composed of 49 percent water, 32 percent fat, 17 percent protein and 2 percent sugar, minerals and other substances. The shell is composed chiefly of calcium carbonate with some water, minerals and organic matter. The food value of eggs varies somewhat with the diet of the hens. By feeding hens certain dyes they can be made to lay eggs with varicolored yolks.

How did *cutting the Gordian knot* originate?

Cutting the Gordian knot means to solve a difficult problem in a bold, decisive or unusual manner. According to legend, the people of Phrygia in Asia Minor received an oracle that their civil trouble would cease if they would elect to the throne the next person who rode up to the temple of Zeus in a carriage. While the people were still deliberating a poor and simple peasant named Gordius drove into the

public square with his wife and son and stopped his oxcart in front of the temple. Gordius was at once chosen king, and to show his gratitude he dedicated his cart to Zeus and placed it in the temple at Gordium, a city that he founded as his capital. The yoke that had been used to draw the vehicle was fastened to the pole with a strangely entwined knot so ingenious and intricate that even the ends of the cord could not be perceived. Later a report spread throughout the civilized world to the effect that another oracle had declared that whoever succeeded in untying the Gordian knot should rule Asia. Many tried to untie the famous knot, but none succeeded. When Alexander the Great passed through Phrygia on his march of conquest he desired to untie the knot at Gordium to create the impression that he was predestined to conquer and govern the world. In his life of Alexander, Plutarch says: "Upon taking Gordium, which is said to have been the seat of the ancient Midas, he found the famed chariot, fastened with cords, made of the bark of the cornel-tree, and was informed of a tradition, firmly believed by the barbarians, that the fates had decreed the empire of the world to the man who should untie the knot. Most historians say that it was twisted so many private ways, and the ends so artfully concealed within, that Alexander, finding he could not untie it, cut it asunder with his sword, and so made many ends instead of two. But Aristobulus affirms that he easily untied it, by taking out the pin which fastened the yoke to the beam, and then drawing out the yoke itself." From this circumstance *cutting the Gordian knot* came to mean solving a problem in a bold or unusual manner, or evading it by some summary proceeding.

What is the Devils Postpile

The Devils Postpile, located in the Sierra Nevada Mountains in the southeastern corner of Madera County, California, only a few miles southeast of Yosemite National Park, is one of the most remarkable geological formations on the North American continent. It is a spectacular mass of hexagonal columns of basalt, resembling an immense pile of posts and ranking among natural wonders with the Giant's Causeway on the northern coast of Ireland. In 1911 President William Howard Taft, recognizing it as a unique example of columnar basalt, set aside the Devils Postpile and 800 acres of land as a national monument. Although the entire mass is more than a mile in length, about a mile in width and 400 feet in height, only in places are the columns distinguishable to the observer. A central part forms a magnificent tower of long, dark and glistening prisms that have been the wonder

of scientists for generations. The columns are not uniform in size throughout, ranging from fourteen inches to three feet in diameter. Some of them are eight-sided, others seven, but the majority are hexagonal. They are remarkably perfect in outline and in places form rows as straight and regular as the pipes in a cathedral organ, appearing to have been carved by the hand of a mighty sculptor rather than wrought through thousands of years in the cosmic crucible. In one section the posts are perpendicular and straight as sawed timbers. Whether they extend downward miles or only a few feet is not known. Gradually the erect columns fall over and the pile grows smaller and smaller, but the newly exposed posts always seem more beautiful and more perfectly formed than the ones that crumbled. Among the natural wonders of America the Devils Postpile ranks with the Devils Tower in Wyoming and the Hudson Palisades in New Jersey and New York. The Palisades along the Hudson, geologists tell us, are of basaltic taprock that pushed between layers of shale and sandstone since washed away by the river. This rocky formation is from 300 to 500 feet high and stretches for fifteen miles along the western bank of the Hudson.

How did *mad as a hatter* originate?

The original application of *hatter* in *mad as a hatter* is not known for certain. Some authorities suppose it may have been merely a corruption of *adder* in a supposedly older phrase, *mad as an adder*, which alluded to the ostentatious manner in which the adder shows anger or irritation. In Anglo-Saxon and Old English *mad* was used in the sense of "furious," "angry" and even "venomous." It is still widely used as a synonym for "angry." "As mad as a *weaver*," now obsolete, has been traced as far back as *Every Woman in Humour*, a play of unknown authorship first printed in 1609. One theory is that the phrase was suggested by the fact that many hatmakers and fur cutters used to be afflicted with poisoning caused by the mercury formerly used as an agent in treating rabbit and other skins for felt hats. It is said that the "madness" of the hatters afflicted with mercury poisoning was manifested by "shakes and mental disturbances." No record of *mad as a hatter* has been found earlier than the nineteenth century, but there is reason for believing that it was proverbial earlier than that. There is probably no truth in the oft-told story that the phrase originally referred to a crazy hatmaker, William Henry Miller, who was elected to the British Parliament in 1830. According to the story, Miller suffered sunstroke while being carried through the street bareheaded

by his enthusiastic supporters after his election was announced. Miller may have been known as "the Mad Hatter," but the chances are he was so called because *mad as a hatter* was already current. Many authorities state that *mad as a hatter* was popularized in 1863 by Charles Lutwidge Dodgson (Lewis Carroll) in *Alice's Adventures in Wonderland*. That is incorrect. The phrase had been used in numerous popular works before the publication of Dodgson's famous book. Thomas Chandler Haliburton had used it in *The Clockmaker: or The Sayings and Doings of Samuel Slick of Slickville*, published between 1837 and 1840. Haliburton wrote: "Sister Sall . . . walked out of the room, as mad as a hatter." In 1849 William Makepeace Thackeray wrote in *Pendennis*: "We were . . . chaffing Derby Oaks—until he was mad as a hatter." In *Tom Brown's School Days* (1857) Thomas Hughes wrote: "He's a very good fellow, but mad as a hatter."

Why are low shoes called Oxfords?

It is believed that low shoes laced or tied over the instep received the name "Oxfords" or "Oxford shoes" from the fact that such footwear was first made and worn at Oxford or in Oxfordshire, England, in the early part of the seventeenth century. A kind of striped material used for shirts and dresses was called Oxford shirting. Oxfords are still the most popular type of men's shoes worn in America. The British use *Oronian* as the adjectival form of *Oxford*. The Anglo-Saxon name for this town was *Oxnaford*, "oxen's ford," and in Middle Latin it was written *Oxonia*. Later the modern spelling *Oxford* was adopted in English but the adjective is *Oxonia* with an *n* added.

Do rats instinctively quit an unseaworthy ship?

That rats instinctively abandon an unseaworthy vessel before it leaves port and that in consequence no rat ever loses its life as the result of the foundering of a ship is an old belief frequently alluded to in the literature of the sea. In Shakespeare's *Tempest* Prospero says of the "rotten carcass of a boat" on which he and his daughter Miranda were abandoned that "the very rats instinctively had quit it." There is, of course, nothing to lead us to believe that rats have a mysterious or instinctive power by which they can decide whether or not a vessel is a good risk. The belief may have been suggested by the fact that rats, although good swimmers for short distances, generally avoid contact with water and are fearful of drowning; therefore it is possible that they may detect minor leaks that are not noticed by the crew until after the ship is under the strain of a voyage. These rodents fre-

quently take refuge in the bilge, the very part of the ship usually affected first by minor leaks, and the presence of water even in small quantities might cause them to abandon the vessel and seek another. The rats usually found on ships are the black and the gray (white-bellied, Alexandrine or roof) species; only occasionally is the brown or Norway rat found on ships. Naval architects and shipbuilders now try to provide ships of ratproof design and construction. Since ancient times it has been widely believed that mice will desert a building that is about to fall. In his *Natural History*, written 77 A.D., Pliny the Elder wrote: "When a building is about to fall down, all the mice desert it." Francis Bacon substituted rats for mice in a similar statement. "It is the Wisdome of Rats," he wrote, "that will be sure to leave a House, somewhat before it fall." Coal miners regard rats in the mines as their protectors and will not kill them. They say that rats sense impending cave-ins and give the miners warning of the danger by nervously scampering from that part of the mine. In both these cases it is probable that the rodents are frightened by tremors which are physically evident to them in their crevices but are not apparent to a human observer.

What is a captive mine?

A captive mine is a bituminous coal mine which is owned and operated for the exclusive use of an industry or individual manufacturing plant and the product of which is not sold commercially in competition with the product of other mines. Many iron and steel plants, railroads, by-product coke ovens, public utilities and other industrial corporations own and operate captive mines solely to provide fuel for their own use. Although the product of the typical captive mine is consumed entirely by the owner, the surplus of some so-called captive mines is sold in the open market. At the present time the majority of captive mines in the United States are owned by steel corporations and railroad companies. *Captive mine* was suggested by a phrase used to describe coal acquired by steel companies around the turn of the century when they were becoming integrated. Coal mined by the steel companies for their own use was called captive coal to distinguish it from free coal, which anybody could buy.

What is a Charley horse?

In sports slang *Charley horse* is the name given to a painful stiffness in the body, especially in an arm or leg. The typical Charley horse is a sudden bunching of muscle fibers into a hard knot, caused by the

fibers being first torn apart by overstrain. A muscular hemorrhage is produced and the injury manifests itself by a swelling, and any attempt to exercise the injured part is generally attended with severe pain. In 1946 the *Journal of the American Medical Association* said that a Charley horse is not a muscle cramp and should not be massaged; it is a muscle injury and the affected limb should be put in a cast or splint. Anybody may be afflicted with a Charley horse, but this type of injury is most prevalent among athletes engaged in strenuous sports, particularly baseball. The term was suggested by the fact that *Charley horse* is a common name for a horse, especially an old plug that is afflicted with sweeny or other stiffness.

Why is the devil called Old Nick?

There are two theories as to how *Nick* became a familiar designation for the devil. According to one, which is accepted by many lexicographers, *Nick* in this connection is an abbreviation or the diminutive of *Nicholas* and was suggested in some forgotten way by the name of St. Nicholas, the fourth-century saint whose name has been corrupted into "Santa Claus," although it is hard to see how the name of the good saint should become associated with the prince of darkness. Samuel Butler (1612-1680) in *Hudibras* derived the term from the first name of Niccolò Machiavelli (1469-1527), Italian statesman and author, who wrote *Il Principe* ("The Prince"), a treatise analyzing the methods by which an unscrupulous person might rise to sovereign power. Butler wrote:

Nick Machiavel had ne'er a trick
(Though he gives name to our old Nick)
But was below the least of these.

Although this may have been merely poetic license on the part of the great satirist, eminent writers have taken this theory of the origin of *Nick* seriously. For instance, in *Machiavelli* (1827) Thomas Babington Macauley said: "Out of his surname they have coined an epithet for a knave, and out of his Christian name a synonym for the devil." The earliest use of *Nick* as a name for the devil recorded by the Oxford dictionary is dated 1643. Another theory is that *Nick* as a designation for the devil is derived from *Nikken*, the name of an evil spirit in ancient Scandinavian mythology. Nikken, according to Norse folklore, haunted pits, mines and other dark regions in the recesses of the earth. In later German folklore *Nickel* is the name of a mischievous and dwarfish goblin or demon fabled to live in mines. The Germans gave

the name *Kupernickel* ("copper-nickel) to the mineral ore now known as niccolite because, though copper-colored, it yielded no copper, a fact attributed to the malevolence of Nickel, the mischievous goblin of folklore. Legend has it that nickel was so called because the hardness of the ore was blamed on Nikken or Old Nick. Although previously identified and named, the metal nickel was first isolated in an impure form in 1751 by Baron Axel Frederic Cronstedt, Swedish mineralogist and chemist. Another euphemism for the devil is *Old Harry*. Some authorities take this to be a corruption of *Old Hairy*. They base this largely on the fact that formerly the devil was generally represented as a hairy monster. In further corroboration of this theory it is pointed out that in the King James Version of the Bible the Hebrew *seirim*, signifying literally "hairy ones," is rendered "devils" in Leviticus 17:7, which reads in part: "And they shall no more offer their sacrifices unto devils." Although *seirim* in this passage probably alludes to he-goats, which were the objects of worship by the heathen, it is argued that the very fact that the translators of the English Bible rendered *seirim* as "devils" indicates they were in the habit of associating *hairy* with the devil. Other authorities, however, are of the opinion that the proper name *Harry* was applied to the devil because of certain connotations suggested by the verb *to harry*, meaning "to harass," "to pillage," "to plunder" or "to tear to pieces." Sometimes *Lord Harry* is used instead of *Old Harry*. *Harry* was often applied in England to a "bumpkin," "boor," "clown" or "lout." *Harry* as a proper name is the diminutive of *Henry*, which comes from a root literally meaning "ruler of an inclosure." *Scratch* in "Old Scratch," another euphemism for the devil, may be a fusion of *scratch* in its usual sense and Scandinavian *Skratti*, "demons." Weird, out-of-the-way places that are supposed to be haunted by *Skratti* are called *Skrattaskar* in Norway.

Do hogs actually kill and eat snakes?

Hogs frequently kill and eat snakes, even venomous species such as rattlesnakes, and snake-infested areas are sometimes cleared of the reptiles by introducing hogs. As a general rule snakes are scarce where there are hogs at large. Hogs do not seem to be poisoned by venomous snakes. It is probably the toughness of their skin and the thickness of the layer of fat rather than any mysterious immunity that protects them from reptile venom. Popularly the old-fashioned razorback hogs of the southern hill country are believed to be particularly prone to kill rattlesnakes. "They (razorback hogs) desired no choicer diet than a mixture of *tunas* (prickly pear apples) and rattlesnakes," wrote J.

Frank Dobie in *A Vaquero of the Brush Country* (1929). Referring to Indiana about 1893, Fred C. Kelly wrote in *David Ross, Modern Pioneer* (1946): "Plenty of copperheads and rattlesnakes still remained and no plowman liked to go where they were. Dave bought hogs to clean up the snake-infested spots. The hogs seemed to accept their part of the work as good fun and went at it with diligence and even with intelligence." Some species of deer also kill snakes, although, of course, they do not eat them. A deer attacks and kills rattlesnakes by jumping into the air and descending upon them with its sharp forehoofs close together. In *Texas* (1840) William Kennedy wrote: "The deer of the West seems to have an instinctive animosity to the rattlesnake, retiring back and then rushing forward and stamping it to death with its hoofs, whenever it crosses its path."

Are the two young of doves always a sexual pair?

Doves and pigeons, including both wild and domestic varieties, generally lay two eggs to a setting. A female may lay more than two eggs, but as a rule a pair can rear only two squabs successfully. In about three cases out of four the two squabs hatched from the two eggs are a male and a female, and in only about one case out of four are they of the same sex. When the young birds represent a pair the second egg laid is usually the one that produces the female. It is not probable that a pair from the same nest often mate with each other in the wild state, for the simple reason that the young birds do not mate until they are about a year old and they are almost certain to be separated during the time intervening. Pairs hatched in the same nest, that is, full brothers and sisters, frequently mate with each other when raised in captivity or the domesticated state, and pigeon fanciers are constantly on the alert to prevent inbreeding. Dr. Oscar Riddle, an eminent authority long associated with the Carnegie Institution of Washington, asserted in a letter to the author that among ring doves "we continually see evidence of preferential matings of this sort when such a pair have grown up in a common cage with fifty or sixty other ring doves."

How are hair balls formed in the stomachs of cows?

Cattle, sheep and other ruminants swallow hair or wool while licking their own bodies or the bodies of other animals and the masses of hair thus eaten unite with vegetable fibers and are gradually molded into a pellet by the constant movements of the stomach. As the animal swallows more hair the pellet increases in size until it becomes

a dense spherical or ovoid body several inches in diameter and covered by a brownish, polished crust. Hair balls five inches in diameter have been taken from the stomachs of cows. Indigestible parts of rough feed sometimes form "feed balls" that are similar in appearance to hair balls. Such concretions undoubtedly interfere with the digestive processes of the animals, but the United States Department of Agriculture says there are no certain symptoms by which their presence can be determined, and therefore veterinarians are at a loss to recommend any treatment for their removal. Although hair balls are occasionally found in the first stomach or rumen of cows, they occur most frequently in the second stomach or reticulum. Balls of substances other than hair and feed are occasionally found in ruminants. A ball of brass pins almost as large as a baseball was found in the stomach of a cow slaughtered in Chicago. Not infrequently one meets with a person who supposes that the hair balls constitute the cow's cud. The cud is a comparatively small quid or bolus of returned food in the animal's mouth. Scientifically a hair ball is known as *trichobezoar*, from Greek *tricho*, "hair," and *bezoar*, the Spanish form of a Persian word meaning "composition" or "concretion."

When were oil pipelines first used?

Transportation of crude petroleum by means of pressure-operated underground metal pipes was suggested soon after the first successful oil well was drilled at Titusville in western Pennsylvania in 1859. As early as 1861 Henry Hartley devised a pressure pipeline that he believed would transport crude oil as easily as water or natural gas if properly installed. The real beginning of pressure-operated pipelines was in 1864 when a New Jersey engineer named J. L. Hutchings demonstrated in the western Pennsylvania oil fields a rotary pump capable of forcing crude oil through iron pipes. Although this first demonstration failed because the pipes leaked at the joints and wasted large quantities of oil, pipelines of this type were soon installed in many places. The early pipelines were small and carried the oil only from the wells to the railroads. They were similar to the "feeder" or "gathering" pipelines now used to carry oil to the trunk pipelines. At first the railroads fought the pipelines bitterly but they rapidly gained favor as a means of oil transportation. The first trunk pipeline was completed in 1879 and ran from the Pennsylvania oil fields to Bayonne, New Jersey. A trunk pipeline from Bradford, Pennsylvania, to New York City was completed in 1888. In the Hepburn Act of 1906 Congress recognized pipelines as "common carriers." Now there are hundreds

of thousands of miles of trunk and spur pipelines in the world. The pipes range in diameter from six to twenty-four inches. Since they often cross mountains and rivers, pumping and storage stations are located along the way and the oil is forced through the pipes under high pressure. The oil moves slowly, usually between three and six miles an hour, but it moves continuously, and generally the year round, although it may be slowed up in cold weather. As a rule pipelines are reversible and can move oil in either direction. In some lines as many as sixteen different grades of gasoline and other petroleum products are transported in successive "slugs." Pipelines are used to transport not only crude oil and its many by-products and natural gas but also to a limited extent many "modified solids," such as powdered coal and certain types of ore in suspension, molasses and the milky latex of natural rubber. Petroleum pipelines are often obstructed by an icelike formation known as gas hydrate. When a section of pipeline has to be cleaned scouring devices called go-devils and scarifiers are blown through the pipe.

Why is time on shipboard indicated by bells?

Announcing time on ships by striking a bell every half-hour dates back to the time when the half-hour sandglass was more practical than the pendulum clock for keeping time at sea. The earliest recorded mention of this system of announcing time on ships is in the seventeenth century. In those days the job of the steersman was strenuous and he was relieved every half-hour. The ship's bell was struck each time the glass was turned over and the steersman was changed. Later the number of bells became signals to indicate a change in the watch, a change in the speed of the ship and the time for meals, prayers, etc. The bell system was retained for centuries because seamen are naturally conservative about such things and it was a convenient method of communicating to the sailors, who were often scattered about the ship. Although the chronometer has taken the place of the sandglass and modern communication devices have taken the place of the actual bells, the traditional bell terminology survives. For purposes of discipline and division of time the crew was mustered in two divisions, the starboard (right side, looking toward the bow) and the port (left side). To be able to tell the time of day by bells one must know what watch it is. According to the system used in the United States Navy, the twenty-four hours of the day were divided into six watches, which were as follows: First watch, from 8:00 P.M. to midnight; mid-watch, from midnight to 4:00 A.M.; morning watch,

4:00 A.M. to 8:00 A.M.; forenoon watch, 8:00 A.M. to noon; afternoon watch, noon to 4:00 P.M.; and dog watch, 4:00 P.M. to 8:00 P.M. Watches were changed at eight bells, that is, at noon, 4:00 P.M., midnight, 4:00 A.M. and 8:00 A.M. The dog watch was divided into the first dog watch, from 4:00 P.M. to 6:00 P.M., and the second dog watch, from 6:00 P.M. to 8:00 P.M. These watches did not receive their name from man's faithful friend, but from a mechanical device known as a dog, which is used in reversing motion, such as in a planing machine. It has been suggested that *dog* in this connection may be a corruption of *dodge*, alluding to the fact that the mechanical dog was introduced to dodge the routine, and the dog watch to prevent the same men from always keeping watch at the same hours. Whatever the reason for the name, the dog watches had the desired effect of changing every night the hours during which the starboard and port watches were on deck. The bells were struck as follows: Twelve o'clock noon, eight bells; 12:30 P.M., one bell; 1:00 P.M., two bells; 1:30 P.M., three bells; 2:00 P.M., four bells; 2:30 P.M., five bells; 3:00 P.M., six bells; 3:30 P.M., seven bells; 4:00 P.M., eight bells; 4:30 P.M., one bell; 5:00 P.M., two bells; 5:30 P.M., three bells, and so on through all of the six watches of four hours each. This system was uniform on all navy vessels. A similar arrangement was in use on merchant vessels, although in many cases the details, such as the method of "dogging" the watches, was left to the discretion of the masters of the various vessels. Bells were struck according to ship's or clock time, which was the time of the zone the ship happened to be in. The earth is divided into time zones, bounded by meridians fifteen degrees apart, and as a ship goes from zone to zone ship's or clock time is set ahead or back, depending on whether the vessel is sailing on an easterly or westerly course, just as railroad time changes as one crosses the United States from east to west or vice versa. Navigation, however, is based on Greenwich time, which is kept by the ship's chronometers, the most accurate clocks made. The ship's bell was struck by having the clapper make the strokes in pairs. For instance, suppose the time was 2:30 P.M. The bell was struck twice in quick succession and the hand was then placed on it to stop vibration. A brief pause followed, when the bell was again struck twice. After another pause the bell was struck only once, making five bells. Only on one occasion each year were sixteen bells struck. At midnight on December 31 the oldest man on board struck eight bells, and immediately afterward the youngest boy on board struck eight bells to ring in the New Year. Formerly most

ships operated according to what was known as the sidereal day, which ran from noon to noon. Soon after the First World War nearly all maritime nations abandoned the sidereal day for computing time on shipboard and adopted the civil day, which runs from midnight to midnight.

Who said: "There is no royal road to learning"?

"There is no royal road to learning" is merely a modern version of Euclid's "There is no royal road to geometry." As now used the saying means that any person, whether king or commoner, rich or poor, must apply himself to master any science or branch of learning. It is said that Euclid founded the school of mathematics at Alexandria about 300 B.C. when that city was just becoming the center of learning in Egypt. Proclus (410-485 A.D.) says in his *Commentary on Euclid's Elements* that King Ptolemy I of Egypt once asked the great mathematician whether there was not some easier way for him to learn geometry than by studying the *Elements*, Euclid's own great work on the subject. Euclid replied: "There is no other royal path that leads to geometry."

Do snakes sleep?

Snakes sleep in the sense that they take physiological rest comparable to sleep in mammals, but they do not have eyelids and they cannot wink or close their eyes. Their eyes are always open and sleeping snakes may be awakened by seeing moving objects. The eyes of a snake are protected by immovable sections of the outer skin which permit the eyeballs to move underneath and which are shed periodically with the rest of the epidermis. Just before the reptile sloughs, the eyes become dull as if covered by a glossy film, but they become clear and brilliant after the skin is shed.

What causes some twins to be identical?

Two distinct types of twins, triplets and other products of multiple births are recognized—fraternal and identical. Between 20 and 25 percent of twins and triplets born in the United States are of the identical type. Fraternal twins may be the same or different in sex and they are not more alike in body and mind than children in the same family usually are. Identical twins are always of the same sex and blood type and bear a close physical and mental resemblance to each other even when not brought up together in the same environment. Each fraternal twin is produced by a separate germ cell, while identical

twins are produced by the splitting of a single egg cell after fertilization. In biology *monozygotic* means developed from a single *zygote* or fertilized egg and *dizygotic* means developed from two *zygotes* or fertilized eggs. An interesting parallel occurs in the animal kingdom. In most mammals that bear more than one young at a time each offspring is derived from a separate egg cell. But the female of the nine-banded armadillo and related species bears its young in litters of four and the members of any given litter are invariably of the same sex. This characteristic is peculiar to the armadillo and scientists believe it is due to the fact that in this animal all the members of a litter are developed by the cleavage of a single germ cell after fertilization. Apparently a single embryo at a certain stage divides and subdivides into four parts and each part develops into a separate offspring. Identical twins, triplets, quadruplets, etc. in the human race are believed to be produced in the same way and for that reason are always of the same sex and blood type. Human beings are the only mammals known to deliver both fraternal and identical offspring. Both fraternal and identical types may occur in the same multiple birth. For instance, four children born of the same mother at the same time might be fraternal quadruplets, identical quadruplets, identical triplets and a fourth member fraternal in respect to the other three, two separate sets of identical twins, or one set of identical twins and two children fraternal in respect to the identical twins and to each other. Multiple births seem to run in certain families. There are records of mothers who have given birth to twins half a dozen times or more. The largest number of children that have been born at a single birth is hard to determine for want of authentic records. Several cases of sextuplets have been reported and perhaps six is the largest number ever authenticated. There is no means of substantiating a report that during the Middle Ages an Italian woman gave birth to nine children at one time and eleven at another. Another common statement, incapable of substantiation, is that thirty-two tiny babies were once stillborn at the same birth. Before the Revolution a man named John Dyer had a waxworks in Boston in which he exhibited a representation of the Countess of Heininburg, who was said to have had 365 children at the same time! Twins are not necessarily born in the same hour or even in the same day. There are records of twins born several days apart. When the first offspring of a hereditary ruler are twins, the firstborn generally becomes heir to the throne. Under the law a minute is as good as a year in regard to heirship. But in China and Japan in the case of multiple births the last one born is regarded as the oldest

on the theory that it was the first conceived. Some people seem to be under the impression that the government provides bonuses to parents who have twins, but thus far the United States has not subsidized the parents of twins or of unusually large families.

Which is correct, *proved* or *proven*?

Nearly all important dictionaries say that *proved* is the correct past participle of *prove*, and that *proven* is an incorrect, archaic, irregular or occasional form, except in connection with verdicts in Scottish law. Since time immemorial "not proven" has been used as a technical term in the courts of Scotland, where it is not only allowable but common for juries in criminal cases to bring in a verdict of "not proven" instead of "guilty" or "not guilty." The verdict of "not proven" operates as an acquittal, but it carries a suspicion of guilt that there is insufficient evidence to prove. In English and American law a person indicted and tried for a crime is found either "guilty" or "not guilty." An acquittal or dismissal for want of evidence in a case where there is widespread suspicion of guilt is popularly called a Scotch verdict. *Proven* instead of *proved* in Scottish verdicts probably did not originate with ignorant jurors or law clerks, as sometimes stated. It was properly formed from *preve*, an old form of *prove* which was used in Scotland and north England long after it gave way to the present form. The Scots accepted *preve* as a native word and *proven* as its past participle, just as the past participles of *weave* and *cleave* are *woven* and *cloven*. *Not proven* in Scottish verdicts is a usage well established and universally recognized. Objection by purists to *proven* for *proved* is generally based on the fact that it does not conform to the usual historic development of past tenses and past participles in the English language. English verbs are said to be weak or strong. In a general way it may be said that weak verbs form their past participles by the addition of *d* or *t*; as, *love*, *loved*; *keep*, *kept*; *hate*, *hated*. Strong verbs form their past participles without the addition of *t* or *d* and by changing a vowel or adding an *n*. Verbs of Anglo-Saxon origin may be strong or weak; but ordinarily only Anglo-Saxon monosyllables or their compounds are strong. *Prove*, though it smacks of Anglo-Saxon stock, is of Latin origin and regularly forms its past participle by the addition of *d*. It is derived from *probare*, "to test," "to try" or "to judge the quality of." Ultimately it goes back to *probus*, "good" or "excellent," and the underlying idea of *probare* was to test or examine a person or thing to determine his or its goodness, worth or genuineness. The use of *proven* instead of *proved* as the past participle of

prove is contrary to the tendency to make virtually all verbs regular by adopting the so-called weak forms in place of the former strong ones. Very few strong verbs are developed in modern English. Notwithstanding this general tendency, many reputable English and American writers in the past have used *proven* instead of *proved*. This change may have been introduced by lawyers. *Proven* occurs in neither the King James Version of the Bible nor Shakespeare. In America *proven* is now more common than *proved* and is steadily gaining ground. All indications are that this preference for *proven* will persist. If it does, we shall have in the course of time the unique case of a weak verb of Latin origin taking its place as a strong verb among the few surviving strong verbs of Anglo-Saxon origin.

Why are certain paintings called miniatures?

Portraits of fine workmanship on ivory, metal and vellum were not originally called miniatures because of their diminutive size, as one would naturally suppose. They were so named because they were painted with minium, which is native cinnabar or red lead. The paint, not the size, was responsible for the name. *Miniare* in Latin means to paint with red lead or vermilion. From this root *miniatura* was formed and first applied particularly to illuminations on the margins of manuscripts and books. Since these paintings were usually small and since the word was popularly associated with Latin *minimum*, "smallest," *miniature* acquired the adjectival force of "minute" or "on a small scale." In *Hamlet* Shakespeare uses "picture in little" in the sense of a miniature.

What does *forlorn hope* mean?

Forlorn hope, now popularly used in the sense of a vain or faint hope, an enterprise with little prospect of success, an almost hopeless undertaking or a "hope against hope," seems to be a product of folk etymology. Originally the phrase had no reference to either forlornness or hope. Apparently it is derived from *verloren hoop*, an obsolete Dutch phrase meaning "lost troop." In old Dutch *hoop*, akin to *heap*, signified "squad," "troop" or "band." The phrase was picked up by military men and applied to a detachment of men, generally chosen from volunteers, sent out to begin a battle, storm a fortification, make a breach in a fort, scale a battlement, open a skirmish in advance of the main army or perform some other service involving extraordinary peril. Members of the storming party or the skirmishing line were the first men in an army to encounter the enemy at close hand and they

were generally more likely to be killed than those who followed. They bore the brunt of the enemy's first onslaught and took the edge off his sword at the risk of their own lives. Hence they were known as the "lost troop." Such a detachment was called *enfants perdus* in French and *verlorner Posten* in German. Both phrases literally mean "lost ones." In *A History of the World* (1614) Sir Walter Raleigh wrote that the Roman *velites* "were loose troops, answerable in a manner to those which we call now by a French name *Enfans Perdues*, but when we use our own terms, The Forlorn Hope." *Forlorn hope* in this sense occurs in English as early as 1539. From military usage the phrase was taken over into everyday English speech to mean any desperate undertaking or hopeless enterprise, the Dutch *verloren hoop*, through error or an effort to be humorous, being assimilated to the English *forlorn* and *hope*. Shakespeare apparently alludes to this phrase in *Cymbeline* when he has the king refer to Posthumus as "The forlorn soldier that so nobly fought." The French phrase is alluded to in *King Lear*, where Cordelia uses the phrase "poor perdu," where *perdu* means a soldier placed in a position of special danger.

What does *soviet* mean?

Soviet (generally pronounced *SOE-vee-ett*) is a modified form of a Russian word meaning "council." Formerly any village, town or city council in Russia was called a soviet. Later the term was employed to denote the councils of workers in charge of strikes and other labor activities in czarist Russia. These soviets or councils were composed of representatives chosen by each factory or plant and they became the nuclei of the revolutionary movement. After the Revolution of 1917 the new system of government in Russia was called soviet because it was administered by delegates elected by soviets composed of soldiers, peasants and workers. In theory the soviets are still the ultimate source of government power in the Union of Soviet Socialist Republics (U.S.S.R.).

Does oil calm troubled waters?

Pouring oil on troubled waters, meaning to make peace, to pacify or to do something to settle a controversy or uproar, refers to the fact that oil will lessen the violence of waves. In his *Natural History* Pliny the Elder, who was killed during the eruption of Vesuvius in 79 A.D., observed that oil calms troubled waters as soft speech soothes ruffled feelings. The Venerable Bede, in his *Ecclesiastical History* (written about 735 A.D.), says "a most creditable man in holy orders" told him

that St. Aidan blessed a young priest sent to a foreign country to fetch a bride for the king of Britain. St. Aidan gave the priest a cruse of oil and told him to pour it on the waves if they became rough. A storm came up and the priest followed his directions and the waves were calmed. When a youth Benjamin Franklin "read and smiled at Pliny's account of a practice among the seamen of his time, to still the waves in a storm by pouring oil in the sea," but he never forgot it and lived to conclude that "it has been of late too much the mode to slight the learning of the ancients." When sailing to London in 1757 he observed that two of the ships left smoother wakes than the others and his captain supposed this to be due to the fact that the cooks had emptied greasy water into the sea. While returning to America in 1762 Franklin noticed that the agitated water in a hanging lamp he had devised was quieted by oil. Passengers told him that fishermen and divers sometimes used oil to smooth water ruffled by the wind. The philosopher pondered over this and wondered why books on experimental philosophy said nothing on the subject. He recalled what Pliny had said and decided to find out the truth. In 1772, while a guest of Lord Shelburne at Mycombe, Franklin put his knowledge of oil and troubled waters to a test in the form of a practical joke. Telling friends he could still waters on a pond in the park, he walked to the margin, waved his cane and made several "magical passes," whereupon the water gradually subsided. He then explained the miracle by saying he had calmed the water with oil carried in the upper hollow joint in his bamboo cane. The next year he went with several scientists and explorers to Portsmouth to demonstrate his art on the turbulent waters off Spithead, but this experiment on a large scale was not entirely successful. Since then thousands of experiments have demonstrated that oil does actually have a quieting effect upon a turbulent sea and considerable data on the subject have been collected by the United States Hydrographic Office. Most seamanship manuals, including Lloyd's, give directions for calming waters with oil. The principle, which Franklin understood, is as follows: Waves are produced by wind, and objects floating on the surface of the sea are not carried along by the waves except when struck by the loose masses of water from breaking crests known as whitecaps. A ship may be in the hollow of a large wave one moment and on the crest the next, and wave after wave may rush under her, but she is not driven from her course unless the waves break and beat against her. A wave is the advance of a mere form. Only the heaping up and breaking of waves is perilous to vessels. Oil produces a thin film over the surface and instead of heap-

ing up there is a tendency for the entire surface film to move along at a uniform rate of speed. On such a film a vessel can ride from hollow to hollow without shocks or danger. Oil forms a continuous film the particles of which are distinct from the particles of water and therefore do not share their orbital motion. Oil also lessens waves by preventing the wind from acting fully on the water, but it is not so effective in lessening waves as it is in preventing them from breaking and damaging the vessel. Ordinary soapy water is one of the best agencies for calming waters, while the best oils for this purpose are those of animal and vegetable origin. In 1890 Lord Rayleigh demonstrated that the thickness of a film of oil on water is less than $1/25,000,000$ of an inch. A pint of oil will cover a water surface an acre in area. On sailing ships it used to be customary to distribute the calming liquid by suspending on a rope from the bow a cone-shaped canvas bag with a small hole in it to allow the oil to flow out gradually over the seaway. Calming waters with oil lost much of its importance after the development of modern power-driven ships.

Is the cinnamon bear a separate species?

The cinnamon bear is not a separate species, but merely a dark chestnut-colored phase of the common black bear (*Ursus* or *Euarctos americanus*), which once inhabited most of the wooded part of North America. Both brown and black cubs are occasionally born in the same litter, although the cinnamon variety is relatively more common among western than eastern members of the species. Black and cinnamon bears are timid and inoffensive and their destruction for fur and flesh has greatly reduced the numbers and somewhat restricted the range of the species. The small glacier or blue bear (*Euarctos emmonsii*), a rare species found in the glacier regions of the Alaska coast mountains from Taku Inlet to the Cooper River, resembles the black and cinnamon bears and some naturalists consider it a color phase of the same species.

How can birds fly higher without flapping their wings?

Some birds, such as condors, buzzards, hawks, gulls and albatrosses, can ascend to great heights and soar about for hours without any apparent motion of their wings. "The way of an eagle in the air" (Proverbs 30:19) was one of the four things too wonderful for Agur the son of Jakeh to understand. These birds are able to do this by taking advantage of minor air currents through imperceptible movements of different parts of the body. The principle is similar to that by

which a kite or glider is flown. A bird that is flying forward and upward against the wind without flapping its wings is in effect riding on an ascending current of air. The motive power seems to be supplied by very slight body, head and tail movements. In *The Voyage of the Beagle* Charles Darwin made the following observations on the flight of condors:

Except when rising from the ground, I do not recollect ever having seen one of these birds flap its wings. Near Lima, I watched several for nearly half an hour, without once taking off my eyes; they moved in large curves, sweeping in circles, descending and ascending, without giving a single flap. As they glided close over my head, I intently watched from an oblique position, the outlines of the separate and great terminal feathers of each wing; and these separate feathers, if there had been the least vibratory movement, would have appeared as if blended together; but they were seen distinct against the blue sky. The head and neck were moved frequently, and apparently with force; and the extended wings seemed to form the fulcrum on which the movements of the neck, body, and tail acted. If the bird wished to descend, the wings were for a moment collapsed; and when again expanded with an altered inclination, the momentum gained by the rapid descent seemed to urge the bird upwards and with the even and steady movement of a paper kite. In the case of any bird *soaring*, its motion must be sufficiently rapid so that the action of the inclined surface of its body on the atmosphere may counterbalance its gravity. The force to keep up the momentum of a body moving in a horizontal plane in the air (in which there is so little friction) cannot be great, and this force is all that is wanted. The movement of the neck and body of the condor, we must suppose, is sufficient for this.

Certain birds of the vulture type depend so much on air currents in flying that sometimes on still, windless days they remain on the ground apparently because they find flight under such conditions too difficult. A young condor does not learn to fly until it is nearly a year old.

Is there a man-eating tree?

The story of the man-eating tree is a myth. There is no species of tree that captures and devours human beings and large animals. Many of the stories of man-eating trees are probably based on a letter written in 1878 by a traveler named Carle Liche to a Polish doctor named Omelius Fredlowski. In his letter Liche asserted that a native tribe in Madagascar worshiped a "devil tree" whose trunk resembled a thick pineapple standing on end. At the apex was a receptacle filled with a highly intoxicating fluid, and huge leaves hung from the trunk like doors swung back on their hinges. Long hairy tendrils stretched

out in every direction from beneath the receptacle, and above it were numerous *pulpi* that projected upward and twirled and twisted incessantly. Liche said he saw the natives compel a woman to mount the trunk, which was eight feet tall, and drink some of the liquid, after which the tendrils and pulpi seized her with savage fury and crushed her to death. Then the broad leaves slowly arose like the arms of a derrick and closed about the victim with the force of a hydraulic press. Fluid from the receptacle, mingled with the blood and viscera of the woman, trickled down the trunk and was collected and drunk by the warriors as they danced around the "sacrifice tree" and became frantically intoxicated. When Liche returned ten days later, according to his report, all trace of the victim had disappeared from the receptacle and nothing but a skull at the foot of the tree remained as evidence of the awful rite. Liche's letter was printed in numerous scientific publications and because of its circumstantial style was widely accepted as authentic, notwithstanding the fact that it bore many of the earmarks of pure fiction. Similar "carnivorous trees" that obtain nourishment by reaching out with tentacles and capturing large animals and human beings were later reported from South and Central America, the Philippines, Australia and other parts of the world. These tales may have been suggested by various poisonous trees in the tropics, as well as by certain plants that entrap and consume insects, such as the well-known pitcher plant. The largest plant of this kind grows in tropical India. It attracts large insects and even mice by an odor from its blossom and then entraps and consumes them by dissolving them in a liquid. In 1924 Chase Salmon Osborn, former governor of Michigan, published a book entitled *Madagascar, Land of the Man-Eating Tree* in which he said that in his extensive travels on the island he never saw a man-eating tree but heard stories about such trees from all the native tribes he met. His conclusion was that "while a man-eating tree is an unlikely thing, it is not an impossibility." The legend of the man-eating tree was investigated and proved baseless by Dr. Ralph Linton, who was in Madagascar from 1925 to 1927 as leader of the Captain Marshall Field Anthropological Expedition. Later Charles F. Swingle of the United States Department of Agriculture investigated the story. "After traveling through much of Madagascar and asking on many occasions about the man-eating tree, I concluded that this fable has no more basis in fact than any ordinary fairy tale," wrote Swingle to the author in 1929. "I did hear of the fable on several occasions in Madagascar, but, like the end of the rainbow, the plant always grew in some other part of the island. It is,

of course, always difficult to disprove stories such as this, but it seems to me that there is no basis of truth for the story of the man-eating tree."

What is banana oil?

Banana oil is not derived from bananas, which contain very little juice and which are the source of no commercial oil of any kind. The transparent, colorless liquid that is known as banana oil and is used as an artificial fruit essence in flavoring jellies, sirups, ice creams and confectionery, is isoamyl acetate, which is produced by the union of certain acetic acids with amyl alcohol, which in turn is a by-product in the fermentation of potatoes, beets and grains. The isoamyl acetates have highly aromatic odors suggesting those of bananas, pears, apples, pineapples, strawberries and other fruits.

How did the mourning band originate?

The black band around the left coat sleeve as a symbol of mourning may be what is left of the black cloaks formerly worn by male mourners at funerals. Some, however, suppose the mourning band to be a relic of the scarf that a lady in the days of chivalry tied around the left arm of her chosen knight to remind him of his plighted word. Others trace it to an old practice in upper-class families in England. Households that could not afford to fit their servants out in complete mourning dress when there was a death in the family, it is said, used to have their liveried male servants wear black hatbands, black gloves and black crape around their sleeves. Since the practice accomplished the purpose of full mourning dress with the additional advantages of economy and convenience, it was adopted by many men not in domestic service. Black hatbands and black gloves as tokens of mourning have virtually disappeared, but the black sleeveband has survived. It was already a recognized custom in America in Colonial times. Under date of September 4, 1779, the *Journal* of the Continental Congress recorded: "Congress being informed that Mr. W. H. Drayton, one of the delegates for the State of South Carolina, died last night, and that circumstances required that his remains be interred this evening: Resolved, That Congress will, in a body, attend the funeral this evening, at six o'clock, as mourners, with a crape round the left arm, and will continue in mourning for the space of a month." After Benjamin R. Milam was killed while leading an attack on San Antonio in December, 1835, the provisional congress of Texas resolved that the president, members of the general council and other officers

should wear crape upon the left arm for thirty days "in testimony of heartfelt sorrow and mourning for his death." The sleeveband is recognized as an acceptable token of mourning by army and navy officers. The customary mourning band, $3\frac{1}{4}$ inches wide and sewed around the left sleeve halfway between the elbow and the shoulder, consists of black broadcloth on overcoats and winter clothing and of dark serge on summer clothing. Mourning rings, black borders on writing paper and envelopes, black tassels on swords, and crape or flowers on the door of the house of a bereaved family all have a similar significance and are relics or modifications of older and more elaborate tokens of mourning.

What is a collateral descendant?

Descendant is often used without qualification when the sense would be expressed better by modifying it by *collateral*. For instance, from time to time we read about the descendants of George Washington. Since the father of his country had no offspring he could not have any descendants in the direct line, although he had brothers and sisters and has many collateral descendants. A person derived from another in the way of generation is correctly referred to as simply a descendant or a lineal descendant. *Lineal* relates to direct descent from an ancestor. A person descended from the same stock but in a different line is correctly called a collateral descendant. *Collateral* relates to descent from a common ancestor through a different line. Strictly speaking, the collateral descendants of a person are not his descendants; they are merely the descendants of one of his parents, grandparents or other ancestors. First cousins are collateral kinsmen, for they have different fathers and mothers but the same grandparents on one side of the family. In tracing collateral heirs the common ancestor may be a more remote relative than a grandfather. Napoleon Bonaparte's only son died childless and therefore Napoleon had only one lineal descendant, but he had brothers and sisters, uncles and aunts and other collateral ancestors and consequently many collateral descendants.

How did the Teddy bear originate?

According to tradition, the little fuzzy stuffed toy bear now known as the Teddy bear was designed by Margarete Steiff, a crippled dress-maker in Germany. About 1888 she is said to have used some leftover material to make a toy bear for a neighbor's child. This toy was popular among the children in the village and no child was happy

until it also had a rag bear. By the spring of 1902 these rag bears had attracted attention at the Leipzig toy market, and in the fall of that year George Borgreldt & Company of New York imported a batch of the bears to America. Richard Steiff (1877-1939), Margarete's brother, saw the commercial possibilities of the toy and began to manufacture it. Later he emigrated to the United States and died at Jackson, Michigan. At first, of course, they were not called Teddy bears. They were sold merely as toys to delight children. It so happened that President Theodore ("Teddy") Roosevelt went on a hunting trip to Mississippi in the fall of 1902, the year in which the German toys were first introduced in America. The public was amused by a news dispatch from Smedes, Mississippi, that said the president had refused to shoot a small bear brought into the camp for that purpose. This inspired Clifford K. Berryman, cartoonist of the *Washington Star*, to draw a cartoon picturing the president in his hunting outfit with his back to a man who is dragging in a small cub with a rope. Teddy has his left hand raised after the manner of a traffic cop to indicate that he objects to killing the bear. Berryman's cartoon, labeled *Drawing the Line in Mississippi*, made a popular hit and the cartoonist adopted the bear as his cartoon mascot. The original of the cartoon is now in the National Press Club of Washington. The cartoon Teddy bear was quite like the toy bears then fresh on the market and people began to associate them with Teddy Roosevelt's hunting exploit as suggested by Berryman. Within a short time Teddy bears were known throughout the United States. Several years later Theodore Bear and a brother began to manufacture toy bears at Cincinnati. This led to the erroneous impression that Theodore Bear, who moved to Chicago and continued to manufacture children's apparel under the firm name of Theodore Bear & Company, introduced the Teddy bear and gave it his nickname.

When did horseshoes originate?

The practice of nailing iron plates or rim-shoes to the hoofs of horses to protect their feet apparently originated several centuries B.C. in the countries on the northern and eastern shores of the Mediterranean. At Pompeii a portrayal of the battle fought at Issus between Alexander the Great and Darius III of Persia shows horses shod with what appear to be iron shoes of the modern type. Appian, a Roman historian who wrote at Alexandria in the second century A.D., mentions iron horseshoes. Even before that time the feet of horses and mules were protected by covering them with "socks" or sandals

of various materials. The Mongols of Genghis Khan bound the hoofs of their ponies in strips of yak skin, and in Japan, before iron horse-shoes were introduced in the nineteenth century, slippers of straw were attached to the hoofs of horses. Suetonius says that Nero "never made a journey with less than a thousand carriages, his mules shod with silver." And again: "On a journey, suspecting that his muleteer had got down to shoe the mules merely to make delay and give time for a man with a lawsuit to approach the Emperor, he asked how much he was paid for shoeing the mules and insisted on a share of the money." Poppaea, Nero's wife, had her horses shod with gold shoes. But these shoes may have fitted over the hoofs rather than having been nailed. The iron horseshoe of the flat type was not commonly known in Europe until about the fifth century A.D., and it was not used generally until the Middle Ages. William the Conqueror is credited with introducing it into England, although some authorities suppose that the first introduction of iron horseshoes into England was by the Romans. What are known as "Roman horseshoes" are still occasionally found in that country. Henry Burden, of Troy, New York, manufactured the first machine-made horseshoes in 1835. Most modern horseshoes are made of steel, although some aluminum shoes are used on racing horses. A farrier was originally one who shoes horses. The term is derived through Old French *ferrier* from Latin *ferrum*, "iron."

How did Cleopatra's nose affect the world's history?

In 1670 there was published in France a book entitled *Pensées* ("Thoughts"), which was alleged to be a collection of the thoughts of Blaise Pascal (1623-1662), French religious philosopher and mathematician. The following passage from this work has become proverbial in all important languages: "Whoever would fully measure the vanity of human life must consider the causes and effects of the passion of love. If the nose of Cleopatra had been shorter, the whole face of the earth would have been different." Professor Fossey J. C. Hearnshaw commented on the saying as follows: "It is arguable that if Cleopatra's nose had been by the fraction of an inch other than it was, her unique beauty would have been destroyed, and if her beauty had been so seriously impaired that she had failed to exercise her fatal fascination over either Julius Caesar or Mark Antony, the course of Roman history, and therefore of the history of the whole of the Christian era, would have been incalculably changed. The battle of Actium would not have been fought; the empire of Augustus would not have been established as it was; neither Pontius Pilate nor Herod would have

ruled in Syria; the conditions which enabled St. Paul to make his missionary journeys might never have existed; Rome might have remained a stranger to the Christian faith; and so on indefinitely." In *Les Trois Sultanes* (1761) the French dramatist Charles Simon Favart wrote: "Ah, who could have foretold that that little retroussé nose would change the laws of an empire?" Favart alluded to Sultana Roxelene, favorite wife of the Ottoman sultan Suleiman (Solyman) the Magnificent. The French still refer to a turned-up nose as "a nose à la Roxelane."

Why are the Japanese called Nipponese?

The Japanese are known as Nipponese because *Nippon* is the name by which the inhabitants have known their country since about 670 A.D. Sometimes the Japanese prefix *Dai*, "great," to *Nippon* and follow it with the suffix *Te Koku*, "empire." *Dai Nippon Te Koku* means "The Empire of Great Japan." Often *Nippon* is restricted to the mainland or the island of Honshu, the largest island and the one on which Tokyo is situated. Japan proper consists of about 4,000 separate islands and islets, of which only about 500 or 600 are inhabited. *Japan* is not a native but a foreign name for the country. It was contributed by the Chinese, who called the island kingdom *Jihpun-Kwoh*, "Sun-Origin Kingdom."

How did *calico* originate?

Calico is a corruption of *Calicut*, the name of a city on the southwestern coast of India, where a simple variety of cotton fabric was produced by native weavers on such a large scale for export that the name of the place became identified with the product. Calicut should not be confused with Calcutta, which is a much larger city on the opposite side of the Indian peninsula. Calico, or "Calicut cloth" as it was at first called, was introduced into England in 1631 by the East India Company. The English silk and wool interests were bitterly opposed to the use of the new fabric from India. They feared that their trade was threatened by the competition with the weavers of Calicut. In one English town men employed by the millowners patrolled the streets and assaulted persons wearing cotton goods of Indian manufacture. The agitation became so great that numerous riots took place. Parliament finally intervened in behalf of the English weavers and passed what became known as the "Calico Act," which forbade the making, selling, buying, wearing and printing of cotton cloth and imposed heavy penalties for each violation. This act de-

stroyed the British market for Indian-made calico and the textile industry of Calicut dwindled to insignificance. It was not until 1831 that Parliament repealed all laws restricting calico printing. The makers of silk and wool fabrics were unable to cope with the growing popularity of cotton cloth and in time England developed a great cotton textile industry. *Calico* denotes different materials in England and the United States. In England the term is applied to plain white cotton cloth or unbleached muslin, while in the United States it is applied to a cheap colored or printed cotton cloth. What the English call calico Americans call muslin. Among the Bantus of the Belgian Congo calico is in such great demand for trading that it is used instead of money as a medium of exchange. Charles Foster (1828-1904), of Ohio, representative in Congress, governor, and secretary of the treasury in the cabinet of President Benjamin Harrison, was known as "Calico Charlie" because in his earlier years he was in the dry goods business.

Where is the tree that is said to own itself?

A large white oak tree in Athens, Georgia, is known as "the tree that owns itself." The ground on which the tree stands was once owned by William H. Jackson, a professor at the University of Georgia in Athens. He was born about the close of the Revolution and was the father of James Jackson, who was chief justice of the supreme court of Georgia at the time of his death in 1887. Professor Jackson was so fond of his white oak tree that about 1820 he wrote a deed conveying to the tree full possession of itself and the land on which it stands. The original of this so-called deed is not a matter of record and it is not probable that it was actually ever registered by a court. But according to a well-established tradition it was to the following effect: "I, William H. Jackson, of the County of Clarke, State of Georgia, of the one part, and the oak tree [defining the location] of the County of Clarke of the other part: Witness, that, for and in consideration of the great love I bear this tree and the great desire I have for its protection for all time, I convey entire possession of itself and of the land within eight feet of it on all sides." Of course, a tree, like other chattels and things, cannot legally own property, but Jackson's admiration for the tree led him to adopt this unique, and perhaps whimsical, means of preserving it after his death. His sentiment has been respected. However defective the tree's title in law may be, it is recognized by the people of Athens, who cherish and protect the tree as if it were "a freeholder of the city." Soon

after the beginning of the twentieth century a private citizen at his own expense had granite posts connected by chains placed around the Jackson oak for its protection, and a white marble block, inscribed with part of the words of the traditional deed, was erected near by. Jackson's method of preserving his favorite tree has been imitated. A white oak tree growing on the sidewalk in Oxford, Georgia, was considered so beautiful that the city officials deeded to it a small plot of ground so it could never be cut down. The "Freed-Budd Tree" at Pippapass, Kentucky, also owns itself. On August 10, 1918, a deed of conveyance was filed in Knott County granting thirty-six square feet of land to a sycamore tree to protect it from interference during its life "for and in consideration of its shade, coolness, and inspiration."

Why do gasoline trucks have chains dragging behind?

Motor trucks hauling gasoline, oil and other petroleum products are sometimes equipped with chains dragging to the ground as a safeguard against the accumulation of static electricity on the trucks, a condition that might result in ignition and in an explosion. The continual contact of the chain with the ground, it is supposed, dissipates any static that might otherwise accumulate on the metal of the truck owing to the swishing of the liquid in the tank and other friction of the moving vehicle. There is a difference of opinion among engineers as to whether such chains actually afford substantial protection in preventing ignition of the gasoline. Some engineers recommend it while others regard it as an unnecessary precaution. Chain drags have been definitely recommended by the National Fire Protective Association and the American Petroleum Institute. In some places, as in the District of Columbia, local laws and ordinances require the use of such chains on trucks hauling gasoline and oil.

Is the llama found in the wild state?

Four species of South American hornless, wool-bearing, cloven-hoofed ruminants—llama, alpaca, guanaco and vicuña—are so much like small, humpless camels that they are called "cameloids." From the standpoint of evolution they are regarded as intermediate between true camels and true sheep. *Llama* is sometimes applied as a generic name to all four species and they are often referred to as "lamoids." *Llama*, *alpaca*, *guanaco* and *vicuña* are all native names as modified by the Spanish. The llama is found nowhere in the wild state and exists only as a domesticated animal. It had been domesticated by the natives of the high Andes in Ecuador, Peru and Bolivia centuries be-

fore the arrival of Europeans and was the only beast of burden domesticated by the pre-Columbian peoples of the New World. The first hint of its existence was given to the Spaniards by an Indian cacique named Tumaco who lived on the Pacific coast of Panama. He told Vasco Núñez de Balboa in 1513 that the coast to the southwest was inhabited by a people who used a queer-looking quadruped to carry burdens and he formed a figure of clay to represent the animal, which the Spaniards variously supposed to be a camel, a deer, a sheep or a tapir. When Francisco Pizarro returned to Spain to appeal directly to Emperor Charles V for aid in his proposed conquest of the Incas he took several of these "Indian sheep" with him. The llama, largest and strongest of the "cameloids," is one of the most useful domesticated animals. Trustworthy and sure-footed, it is an excellent beast of burden for light loads, and it produces wool, hides, meat and milk (and its dried excrement is used for fuel), a variety of commercial virtues possessed by few other animals. It stands three or four feet high, weighs 250 pounds and can carry about 100 pounds. Its somewhat smaller cousin, the alpaca, is covered with long wool or hair from head to foot and resembles a long-necked sheep. It is seldom used as a burden carrier and is kept chiefly for its valuable wool, which is light, warm and possessed of the quality of shedding snow easily. Not so thoroughly domesticated as the llama, the alpaca is often referred to as a semidomesticated animal. The Indian owners of alpacas in South America let them run virtually wild, corralling and clipping them only about every two or three years. In pre-Columbian times large numbers of alpacas were sacrificed each year by the Incas, white ones being offered to the sun-god and black ones to his son. The alpaca is still regarded as a sort of sacred animal by the natives. Remnants of blankets woven from alpaca hair have been found in the most ancient Inca tombs. Both the llama and the alpaca are believed to be descended from the guanaco, a denizen of the high tablelands from Ecuador to Cape Horn. Though often tamed, the guanaco has never been domesticated in the true sense of the term. It is a stupid animal, incapable of self-defense, and is sometimes clubbed to death in the open by the primitive inhabitants of Tierra del Fuego, who seek it for wool, hide and flesh. The guanaco is said to be one of the few large quadrupeds that will drink salt water as readily as fresh water. The smallest and most slenderly built of the "cameloids" is the vicuña, which runs wild in the Andes of Bolivia, Ecuador and Peru. Its short, silky hair is soft, fine and highly prized. The animal has been hunted so widely for its valuable hair that the species is rare and

several times has been threatened with extinction. Vicuñas are fleet-footed and can jump twenty feet, but the Gauchos say they will not cross or break a string across their path. Alpacas and vicuñas have been crossed and the hybrid is known as the *paco-vicuña*. Like most domestic animals, the llama and alpaca vary widely in color, while the guanaco and vicuña, like most wild animals, have more or less fixed colors. The llama ranges in color from white, brown, white and brown to almost black; the alpaca is dark brown or black and occasionally white. The color of the guanaco is pale reddish blending into white below, while the vicuña is uniform orange red or light brown. All four species of "cameloids" have the disagreeable habit of spitting masses of partly digested food with considerable precision at persons who annoy them. Although their flesh is often eaten, it is not particularly palatable to the uninitiated. None of the four species has been introduced successfully into foreign countries.

Does any plant have black flowers?

No species of wild plant produces a flower or blossom that is absolutely black and so far none has been developed artificially. The flowers of the *Amorophophallus*, a large tropical Asiatic plant of the Arum family, come as near as any to being black. Certain varieties of *Scabiosa* and some pansies are extremely dark, and roses have been grown of such a deep red color that florists call them black for classification purposes. The flowers of a rare variety of "black hollyhock" are dark satiny purple rather than black. There are about 200,000 known flowering plants, ranging in size from large trees to members of the genus *Wolffia*, tiny aquatic plants no larger than the head of an ordinary pin. The predominating colors in flowers are white, yellow, red and blue. Most plants are green, but there are very few flowers of that color. Bright colors in flowers, like fragrance, help to attract insects, which play an important part in fertilizing plants. Nature seems to have made the flowers bright in color to make them noticeable to the insects in the midst of green leaves. White flowers as a rule produce more fragrance than do colored ones. Fragrance in flowers is produced by volatile oils composed chiefly of carbon and hydrogen. Owing perhaps to the ultraviolet light rays in the clearer atmosphere at elevations, flowers growing at high altitudes are generally brighter than those at low altitudes. Just what species of plant produces the largest flowers is hard to say, because flowers vary widely in shape. It is generally said that the largest known flowers are those of the genus *Rafflesia*, a family of stemless, leafless, parasitic plants native

to the East Indies. The genus was discovered by and named after Sir Thomas Stamford Bingley Raffles (1781-1826), English colonial administrator, author and scientist, who founded Singapore and served as governor of Java and who was the first president of the London Zoological Society. *Rafflesia arnoldi* is believed to be the largest species and often its blossoms are three feet in diameter and fifteen pounds in weight. The blossoms have five petals, which sometimes are a foot long and an inch thick and are colored brick red speckled with spots of white. These plants, which exhale a disagreeable, carrionlike odor, derive their sustenance from the stems of other plants and die soon after flowering. *Amorphophallus* *titanum*, native to the Sumatran jungles, has a "flower" several feet long, but what is called the flower is really a sheath surrounding many flowers. *Aristolochia grandiflora*, the pelican flower and goose-flower of the West Indies and Central America, has flowers sometimes twenty inches in diameter. The white flowers of *Victoria regia*, a giant water lily native to Brazil and the Guianas, measure from twelve to eighteen inches across. Some of the floating leaves are as much as eight feet in diameter, have rims several inches high and will support a heavy man's weight. The blossoms of the duckweed *Wolffia*—so tiny they can hardly be seen by the naked eye—are considered the smallest flowers. Cotton blossoms are white when they unfold but they almost immediately turn red.

What does *The Dalles* mean?

The Dalles, pronounced *the dalz*, with only one syllable in the second element, is an Anglicization of *la dalles*, the plural term applied by the French employees of the Hudson's Bay Company in the Northwest to a place in a river where the stream flows rapidly through a deep and narrow chasm or gorge produced by high rock walls. The French word *dalle* means not only "flagstone," "slab" or "flat tile" but also "trough," "tube," "gutter" or "spout." To the early French *coureurs de bois*, hunters, trappers and traders the narrow passages cut through the basaltic rocks by rivers suggested troughs or spouts. They called such a place *la dalles* much as the English would call it *the rapids*. The Dalles, the seat of Wasco County, Oregon, was founded in 1847 and was so called from its being near the dalles of the Columbia, about eighty miles above Portland, a point where the mile-wide stream plunges over a basaltic barrier and then rushes through a deep gorge less than two hundred feet in width. The name of this town, which is *The Dalles* and not

simply *Dalles*, is frequently misspelled and mispronounced through confusion with *Dallas*, a common place name which is pronounced *dal-as*, in two syllables. This confusion is increased by the fact that the seat of Polk County in the same state is named Dallas. Like most other places in the United States bearing this name, it was named after George Mifflin Dallas of Pennsylvania, who was vice-president of the United States from 1845 to 1849 when James K. Polk was president.

Does the president's picture appear on postage stamps?

Section 136 of the United States Postal Laws and Regulations forbids the placing of pictures of living persons on fiscal issues of the government, including postage stamps, and consequently the picture of no president has been placed on any United States stamp while he was living. As a rule the portrait of a man who has been president is chosen for use on a stamp soon after his death. This prohibition naturally does not apply to foreign governments. The Guatemalan government in 1938 authorized a postage stamp bearing the likeness of Franklin D. Roosevelt, and that is believed to have been the first postage stamp ever issued portraying a living president of the United States. In the same year an ingenious artist worked what appeared to be the profile of President Roosevelt into the design of the Grand Canyon special stamp. It was not noticed until after the stamp was in circulation.

How did *silhouette* originate?

Silhouette, "the outline figure of an object filled in with a uniform color," is derived from the surname of Etienne de Silhouette (1709-1767), who in 1759 became *contrôleur des finances* of France through the influence of Mme. de Pompadour. The new minister had written widely on financial subjects and was reputed to be a finance expert. Accordingly the court at first trusted blindly in his ability to find a painless way of replenishing the treasury, which had been emptied by a long and exhausting war. Severe economy was Silhouette's panacea. During his brief tenure of office the public practiced all sorts of parsimonies. Even the frills and ruffles were omitted from women's dresses and all fashions bore the marks of the financial paring knife. Savings effected in compliance with the finance minister's program were referred to as *à la silhouette*, but the name survived in only one connection. It so happened that it was fashionable at that time to make black and white profile portraits. The shadow of the subject was

projected on a sheet of white paper, traced in outline and then filled in with a dark color. Wits referred to these profile pictures as *silhouettes* in allusion to the rigid and often petty economies introduced by the finance minister and the sacrifices he was alleged to demand of the nobles, even to the converting of their table plate into coin. The name stuck and in time came to be applied to any figure reduced to its simplest form. The earliest use of *silhouette* in English recorded in the Oxford dictionary is dated 1798. In 1835 the French Academy gave the term a place in its dictionary. It later appeared that Silhouette really knew very little about finance and was something of a quack. At any rate a storm of protest gathered and broke over his head when he proposed to levy a land tax on the nobles, reduce pensions and in other ways place the burden on the privileged classes. Frustrated in his original plans, he resorted to one financial scheme after another and, as a result, was ridiculed unmercifully in jokes and cartoons. He was driven from office the same year he was appointed and is remembered chiefly because his name became a word in the dictionary.

Where did the game of horseshoes originate?

The game of horseshoes is essentially the British game of quoits played with horseshoes instead of quoits. *Quoit* is from Middle English *coite*, "a flat stone." It has been compared with the discus throwing of the ancient Greeks, one of the five games of the pentathlon played at the Olympic games more than 2,600 years ago. But discuses and horseshoes (quoits) differ materially. The discus was a solid object and the player's chief purpose was to throw it as far as he could. The quoit, on the other hand, is ring shaped, being rounded on one surface and flat on the other, and it is much lighter than the Greek discus was. Throwing quoits or horseshoes is a test of accuracy and skill rather than of strength. There are few early traces of the game of quoits on the continent; it is supposed to have originated on the borderland of Scotland and England. During the reigns of Edward III and Richard II in the fourteenth century the throwing of quoits was prohibited by royal decrees in order that more attention might be given to archery, then thought to be more important to the national defense. This lowly but wholesome game apparently originated at the crossroads and at first was played only by the working classes and the common people. In *Toxophilus*, written in 1542-1543 and presented to Henry VIII, Roger Ascham said that "quoiting is too vile for scholars." Some authorities suppose that the country people in the

Midlands used horseshoes for the game because they could not afford to buy quoits, but others are of the opinion that the horseshoe was the original of the quoit, which in some parts of Britain is still often referred to as "the shoe." Horseshoe pitching was brought from England to America by the first colonists and at an early date it became a sand-lot favorite in both the United States and Canada, where it has flourished to a greater extent than in its native land. In 1939 Massachusetts State College introduced horseshoes as part of its summer physical training course, and in 1946 President Harry S. Truman took up horseshoe pitching on the White House grounds for exercise.

What causes a person to blush?

Man is said to be the only creature that blushes. Blushing is the sudden reddening of the face, neck and breast as the result of nervousness or excitement. Vasomotor nerves lie parallel with each artery and capillary in the body and control the dilation and contraction of the blood vessels and the amount of blood that passes into them. Emotions such as shame, fear, diffidence, confusion and guiltiness often excite the nervous system in such a way that the vasomotor nerves are paralyzed, and during the suspension of their action an extra quantity of blood rushes into the superficial blood vessels. This increased flow of blood causes the skin to redden. The blush is more or less general throughout the body, but it is clearly visible only on the face, neck and breast, owing perhaps to the peculiar location of the arteries and capillaries in that part of the body. Among the colored races the effects of blushing are just as real but not so obvious as in the white race. Charles Darwin observed that savages who went almost naked often blushed to the waist. A French artist told Darwin that some of his models blushed all over and the scientist asked the English artist Thomas Woolner to have "some noteworthy young man observe young and inexperienced girls who serve as models and who at first blush much, to determine how low down the body the blush extends." The report made by Woolner to Darwin on the subject is not extant. It is said that "sophistication" sometimes destroys the power to blush. Some persons can prevent themselves from blushing by the exercise of will power, while others are so sensitive and self-conscious that they can be made to blush merely by somebody's telling them that they are blushing. The Bible refers to the blush of shame. Jeremiah 6:15 says: "Were they ashamed when they had committed abomination? Nay, they were not at all ashamed, neither could they

blush." According to Ezra 9:6, the Hebrew high priest and statesman, when he knelt to pray, said: "O my God, I am ashamed and blush to lift up my face to thee, my God." Besides the blush of shame, Shakespeare mentions the blush of modesty, bashfulness and guilt. A proverb says that blushing is virtue's color. In *Emile*, Rousseau wrote: "Whoever blushes is already guilty, true innocence is ashamed of nothing." Edward Young in his *Night Thoughts* said that the man who blushes is not quite a brute. Actually, blushing proves nothing. The innocent and guilty are equally likely to blush when suddenly accused of wrongdoing. Sometimes fear causes the face and lips to become pale, but in that case the cause is different. The blood rushes to the internal organs and leaves the face and neck bloodless and blanched. Likewise the reddening of the face when a person is angry is not a true blush and has an entirely different origin.

What is a star chamber?

In the opening speech of *The Merry Wives of Windsor*, Justice Shallow says to Sir Hugh Evans: "Sir Hugh, persuade me not; I will make a Star-chamber matter of it; if he were twenty Sir John Falstaffs he shall not abuse Robert Shallow, esquire." *Star chamber* is the name often given to any tribunal that exercises arbitrary powers behind closed doors. Sometimes a high handed and unjust official act is referred to as a star-chamber proceeding. It seems that the name was first applied to the room in the royal palace at Westminster, London, where the king's privy council, or the inner circle of it, sat in its judicial capacity in the fourteenth and fifteenth centuries. The Court of Star Chamber grew out of these meetings. It was established in 1487 by Henry VII after the close of the Wars of the Roses and it gradually assumed jurisdiction over all civil and criminal offenses not provided for by law. So many of its decisions were highhanded and unjust that in Shakespeare's time the court was proverbial as a typical instrument of tyranny and oppression. The Court of Star Chamber was abolished by act of the Long Parliament in 1641 during the reign of Charles I. In 1577 Sir Thomas Smith said the apartment where the king's council sat was called the star chamber "because at the first all the rooffe thereof was decked with images of starres gilted." Although there were no stars on the ceiling of the room in Sir Thomas' day and there is no confirmatory evidence, the Oxford dictionary regards the theory as "highly probable." Some authorities, however, suppose the name to be derived from Saxon *steoran*, "steer" or "govern." We find it called "the sterred chambre" in 1398, and in the rolls of Parliament for 1426 we read of

“the sterred chambre at Westmynster.” William Blackstone, in Book IV of his *Commentaries on the Laws of England* (1765), advances a curious theory. Although the Oxford dictionary says the conjecture “has no claim to consideration,” it is interesting. After stating the other conjecture, Blackstone says:

It is well known that, before the banishment of the Jews under Edward I, their contracts and obligations were denominated in our ancient records *starra* or *starrs*, from a corruption of the Hebrew word, *shetar*, a covenant. These *starrs*, by an ordinance of Richard I, preserved by Hoveden were commanded to be enrolled, and deposited in chests under three keys in certain places; one, and the most considerable of which was in the king’s exchequer, where the chests containing these *starrs* were kept, was probably called the *star chamber*; and, when the Jews were expelled the kingdom, was applied to the use of the king’s council, sitting in their judicial capacity. To confirm this, the first time the *star chamber* is mentioned in any record, it is said to have been situated near the receipt of the exchequer at Westminster.

What is pig iron?

Pig iron is merely “raw iron” as it comes directly from the smelting furnace. It is simply crude iron cast in oblong ingots or masses of convenient size and shape. Pig iron is impure, coarse and brittle and must be refined by resmelting and strengthened by special treatment before it is usable by industry as wrought iron and steel. Formerly iron was cast in open beds of sand on the foundry floor and the molten metal was conducted from the smelting furnace through a straight channel or runner to lateral branches at definite intervals. The main channel was called a *sow* and the lateral branches *pigs*, from the fancied resemblance to a litter of pigs in the act of sucking their dam. In course of time workmen fell into the habit of speaking of the large oblong ingots cast in the long main channel as *sows* and those cast in the short diverging branches as *pigs*. The metal in the entire mold was the “*sow and pigs*,” and after the metal had cooled, solidified and was broken up the pieces were all known as *pigs*. Although this is the generally accepted theory of the origin of *pig iron*, some authorities suggest a different origin. Possibly, they say, the *sow-and-pigs* idea was suggested by the name rather than the name by the idea. From the time of the Norman Conquest until the fifteenth century *pig* was used in England as the name of a standard unit of weight, representing five stones of fourteen pounds each, or seventy pounds. According to this theory, the pieces of crude iron were called *pigs* because they at one time weighed a *pig*, and the weight in turn

received its name from the fact that it represented the average weight of pigs or shoats of a certain age. In reference to lead, a pig is still a mass weighing 301 pounds. Pig iron containing more than 1.7 per cent of carbon is used for casting and is known commercially as cast iron.

How did Lead in South Dakota get its name?

Lead, a town of several thousand inhabitants a few miles southwest of Deadwood in western South Dakota, received its name from the fact that a large *lead*, lode or vein of gold was found at that point in the Black Hills. The name of the town is frequently mispronounced by outsiders because they supposed it to be derived from *lead*, the name of the metal. It is correctly pronounced *leed*, like the present tense of the verb *to lead*, and not *led*, like the past tense of that verb. Lead, which is the mining capital of the Black Hills, was founded in 1876 and incorporated the following year. Millions of dollars' worth of gold has been taken from the Homestake Mine, which is still one of the richest gold mines in the world. Besides, gold ore is shipped to Lead from neighboring mining towns. Many people confuse Lead with Leadville, which lies at an altitude of 10,188 feet above sea level—the highest city in the United States—in the Rockies southwest of Denver in central Colorado and which was named from the metal. *Leadville* is pronounced *LEDD-vill*. In 1850 and the years following gold, silver, lead, zinc and copper were discovered in the vicinity of Leadville and the locality is rich in tales and legends of early mining-camp days. In 1860 one Abe Lee named the present site of Leadville "California Gulch" in ironical allusion to the fact that he had failed to find gold in California in 1849. When the first village government was organized there by the miners they called it Oro City. But later silver ore was found in the vicinity and, upon the suggestion of H. A. W. Tabor, the name was changed to Leadville. It had a population of 35,000 in 1879, the peak year of its silver production. Since then it has gradually decreased in importance and has shrunk to little more than a ghost town of a few thousand inhabitants, although some mines in the vicinity are still worked.

What is a Gretna Green marriage?

Gretna Green is a village in the county of Dumfries, Scotland, a few miles beyond the English border. In 1753 Parliament passed an act, sponsored by Lord Hardwicke, which abolished simple declaration marriages and required all marriages in England to be performed by

ministers of the Church of England after the publication of bans. The English Marriage Act, which went into effect in 1754, not only made it difficult for nonmembers of the Established Church to get married but also virtually made clandestine marriages impossible. Previously eloping couples were usually married in the old Fleet prison in London. Gretna Green, as the nearest village on the main road on the Scotch side of the border, became notorious as the place where eloping couples in England went to take advantage of the greater ease with which ceremonies could be performed under the laws of Scotland. At that time the Scottish law required merely that the parties declare in the presence of witnesses their desire to marry. The marriage laws of Scotland were so lax that the first Earl of Eldon, lord high chancellor of England, who himself had eloped to Scotland to get married, asserted that he had for a long time been trying "to find out what does not constitute a marriage in Scotland." Later Scotland required a public record of all marriages. Most of the ceremonies at Gretna Green were performed by the local blacksmith over his anvil, and it became a tradition that the blacksmith was the person "authorized" to act as the "witness," although the tollman, the ferryman and in fact almost anybody might officiate. More than 200 couples were married in one year at the Gretna Green tollhouse. Thus Gretna Green, as one writer put it, became the resort of all "amorous couples whose union the prudence of guardians prohibited." In 1856 Scotland passed a law making a marriage invalid unless one of the parties had resided in Scotland at least three weeks, but even this restriction did not prevent Gretna Green from functioning as a "marriage mill." Thousands of runaway couples continued to be married at Gretna Green by the local "witnesses" and "priests" who received thousands of dollars a year for performing quick marriages. Even nobility and royalty occasionally patronized the Gretna Green marriage mill, which was finally put out of business in 1940 when Scottish law declared that no marriage is valid unless the ceremony is performed by a duly ordained minister or a registrar. But *Gretna Green marriage* still survives as a synonym of a "runaway marriage."

Why are moccasin snakes called cottonmouths?

Water and highland moccasins are called cottonmouth snakes from their habit of opening their mouths wide and exposing the whitish interior when excited or disturbed. In the South *cottonmouth* is applied specifically to the water moccasin, *Agkistrodon piscivorus*, while elsewhere in America it is applied generally to the highland

moccasin, *Agkistrodon mokasen*, also known as the copperhead. The water moccasin and the copperhead are pit vipers and allied to the rattlesnakes, although they have no rattles. Both eject the same type of poison as the rattlesnakes, both are viviparous and both, when annoyed, vibrate the tail, which makes a buzzing sound if it strikes leaves. The copperhead, which attains a length of only three feet, is found chiefly in damp places throughout most parts of the eastern United States. Its upper color is coppery brown with dark transverse markings. More agile than rattlers, this species is dangerous, but not so dangerous as rattlesnakes because of its smaller size, shorter fangs and less virulent venom. Since it strikes without warning there is a common belief that the copperhead is less "gentlemanly" than the rattler, and it is sometimes called the "dumb rattlesnake"; actually it is generally shy and quiet and seldom strikes unless definitely annoyed or attacked. The water moccasin, which attains a length of about five feet, is stouter in build and more venomous than its cousin the copperhead or highland moccasin. It is found in lagoons, bayous and sluggish waterways from West Virginia to Florida and the Gulf states. The upper color of this species is dark brown or olive. The young are brightly colored and in some old specimens the color fades into a uniform muddy shade. Although pugnacious when attacked, it generally tries to escape. It is commonly confused with the "false water moccasin," *Natrix sipedon*, a smaller, nonvenomous water snake, which is savage in appearance and disposition and can inflict a severe but not poisonous bite.

Will pearls dissolve in vinegar?

In his *Natural History* Pliny the Elder says Cleopatra made a wager with Mark Antony that she could spend ten million sesterces (between two and three million dollars) on a single banquet. The Egyptian queen then proceeded to prepare the most expensive carbonated drink in history. Having in her earrings two of the largest pearls in the world, she threw one of them into a vessel of vinegar, which she drank to the Roman's health as soon as the pearl had dissolved. Plancus, the umpire, immediately pronounced the queen winner of the wager and refused to let her dissolve the second pearl. Before Cleopatra's time, Pliny informs us, Clodius, son of the actor Aesopus, dissolved a pearl worth \$40,000 in vinegar to have the satisfaction of consuming the most expensive drink ever prepared; and, according to Suetonius, the Emperor Caligula later exhibited his extravagance by drinking pearls of great price dissolved in vinegar. Some writers regard these stories

as historical fictions. Like all carbonates, pearls will dissolve in strong vinegar and other weak acids, evolving carbon dioxide and leaving calcium acetate as dissolved salt. Chemists say pearls consist of 91.7 percent calcium carbonate, 6 percent organic matter and 2.3 percent water. Accordingly they should dissolve in vinegar containing 6 or more percent of acetic acid. But because of their great hardness pearls would dissolve in such vinegar very slowly. It is not probable that an ordinary pearl would completely dissolve in even strong vinegar in less than three or four hours. Therefore, if Pliny's account is correct, the Egyptian queen must have waited a long time for the pearl to dissolve or she must have used vinegar too strong to drink without serious injury. If the pearl were first pulverized it would not only readily dissolve but effervesce mildly. The Cleopatra story has a counterpart in English history. Tradition says Sir Thomas Gresham, the London merchant who founded the Royal Exchange and Gresham College in London and after whom "Gresham's law" was named, once pledged Queen Elizabeth's health in a cup of wine in which he had dissolved a precious stone worth 15,000 pounds after he had pulverized it.

What is shoddy?

Shoddy, which is found in the seventeenth-century Yorkshire dialect, is of unknown origin. The compilers of the Oxford dictionary suppose it to be related to *shed* in the sense of "separating" or "sloughing." Originally the term was applied to the *shreds* or waste incident to the manufacture of woolen fabrics. *Shoddy* became the generic name of low-grade woolen cloth made of used wool or the worked-up waste of woolen or worsted goods. Old clothes made of long-fibered wool are collected by ragmen, deviled or unraveled by machinery, mixed with new wool and made into shoddy. Although the term is generally associated with a low grade of woolen cloth, many pieces of clothing made entirely of shoddy wool are very attractive as well as durable. The United States Department of Agriculture says it does not follow that a piece of goods should be called shoddy merely because it contains a small percentage of shoddy wool. Some of the finest overcoats contain shoddy. Many states have passed laws forbidding the use of shoddy for certain specified purposes. A Pennsylvania law prohibited the use of shoddy in making or renovating mattresses, pillows, bolsters, comfortables, cushions or upholstered furniture on the ground that it was dangerous to health. In 1926 the Supreme Court of the United States declared this act unconstitutional, asserting that the danger in using shoddy could be eliminated by sterilization and that to prohibit the

use of sterilized shoddy was arbitrary and unlawful. During the Civil War *shoddy* acquired the meaning of anything inferior or adulterated. The term was particularly associated with the inferior clothing made for the army by profiteering contractors. In the second series of *The Bigelow Papers*, which began in 1864, James Russell Lowell wrote:

I call it shoddy,
A thing, sez he, won't cover soul nor body,
I like the plain all wool of common sense,
That warms you now and will a twelvemonth hence.

Which is correct, *Tangier* or *Tangiers*?

Tangier (pronounced *tan-JEER*) is the accepted English spelling of the name of the port, city and district in northwestern Africa. A generation or two ago it was commonly spelled and pronounced *Tangiers*, with a final *s*, and that usage is still quite common. *Tangier* is the French form of the name and it has generally prevailed. There is a tendency among English-speaking peoples to add an *s* in spelling and pronunciation to French names that have no final *s*. For instance, in English the French *Marseille* (ancient Greek *Massilia*) becomes *Marseilles*. The Spanish and German form of *Tangier* is *Tanger*, and the native population calls its city *Tanja*. An ancient Roman city near the site of modern Tangier was known in Latin as *Tingis*. The name is believed to be derived from Arabic *Tanja*, literally meaning "clay cooking vessel." Tangier occupies a strategic position just outside the Strait of Gibraltar, only about thirty miles southwest of Gibraltar, and long has been a bone of international contention. In English a native of Tangier is known as a *Tangerine*, a term also applied to the mandarin orange, a small, oblate, yellowish-red Chinese orange with thin, easily detached rind and dry, sweet pulp. The tangerine is the most important member of the so-called "kid-glove" group of oranges. In some forgotten way a Virginia island in Chesapeake Bay near the Maryland line received the name Tangier Island. It was first settled in 1686 by John Crockett, who, with his eight sons and their families, came from the Virginia mainland. Even at the present time virtually a third of the inhabitants of Tangier Island bear the surname Crockett.

Why is an old joke called a Joe Miller?

A stale story or worn-out joke is called a Joe Miller after an English comedian named Joseph (or Josias) Miller (1684-1738). About 1709 Joe Miller began to appear in the Drury Lane Theatre in minor comic roles, such as the first gravedigger in *Hamlet*, Trinculo in *The Tempest*

and Marplot in Mrs. Susannah Centlivre's *The Busybody*. The comic actor, though a great favorite with London theatergoers, was illiterate, and it is said that he learned his parts, such as they were, by hearing his wife read them. Some writers say that among the habitués of the coffeehouses that Joe Miller frequented he was famous for his jokes and witticisms. Others say he was grave and taciturn off the stage and that friends fell into the habit of attributing all sorts of jokes to him in jest. However that may be, he could not read or write and probably never originated and certainly never wrote a joke himself. The year after Joe Miller's death—1739—an actor named John Mottley (1692-1750) published a book entitled *Joe Miller's Jest, or Wits Vade Mecum*. It consisted of a collection of old and contemporary jokes and witticisms, many of which were rather crude and coarse and only three of which were told of Joe Miller. Miller's name may have been used in the title merely because Mottley thought his reputation as a comedian would make the book popular. There is, however, a legend that Mottley and other actors compiled and published the joke book under Joe Miller's name to raise money for the dead comic actor's impoverished family. *Joe Miller's Jest*, with subsequent additions and alterations, went through many editions and was immensely popular for generations. Some of the jokes included in the original edition are still current. Thus it came about, somewhat unjustly, that Joe Miller's name became associated with "chestnuts," threadbare jests and stale jokes.

How did *robot* originate?

Robot was coined by Karel Capek (1890-1938), Czech short-story writer, poet, playwright and theatrical producer. He employed the term in *R. U. R.* (the initials of Rossum's Universal Robots), a fantastical melodrama satirizing the machine age and mechanical civilization. The plot hinges on the Robots and Robotesses, artificial men and women invented by a young engineer named Rossum and manufactured in his Universal Robot Factory. In the play the Robots, which have superior intelligence and mechanical efficiency but no soul, sensibility and emotion, finally take on the attributes of human beings and threaten to destroy the human race. Capek's play was translated into English by Paul Selver and produced in the United States in 1923. Immediately *robot* became popular as a common noun denoting ingenious mechanical devices that do human work. The term was also applied to persons who are highly efficient but heartless, and to spiritless drudges or workmen brutalized by hard manual labor.

Robot is a shortened form of Czech *robota*, one meaning of which is compulsory service or slavery. It is akin to Old Slavic *rabota*, "servitude," Gothic *arbiths*, "toil," Modern Russian *rabota*, "work," and Modern German *arbeit*, "labor." In Latin *robur* signifies "strength." Under the false impression that *robot* is of French origin many people pronounce it *ROE-boe*. It is correctly pronounced *ROE-but* or *ROBB-ut* in English.

Did Dr. Osler advocate chloroforming men at sixty?

There are still many people who believe that Sir William Osler seriously advocated chloroforming all men at sixty—or forty, according to some. Dr. Osler, an eminent British physician, who died in 1919 at Oxford, England, was for many years a professor of medicine in America—several years at the University of Pennsylvania and fifteen years at the Johns Hopkins School of Medicine in Baltimore. In 1905, just before he retired as dean of the latter institution, he delivered the annual Washington's Birthday address. In the course of this address, which was on the subject of *The Fixed Period*, he said:

I have two fixed ideas well known to my friends, harmless obsessions with which I sometimes bore them. . . . The first is the comparative uselessness of men above *forty* years of age. . . . My second fixed idea is the uselessness of men above *sixty* years of age, and the incalculable benefit it would be in commercial, political and in professional life, if as a matter of course, men stopped work at this age. In that charming novel, *The Fixed Period*, Anthony Trollope discusses the practical advantages in modern life of a return to this ancient usage, and the plot hinges upon the admirable scheme of a college into which, at sixty, men retired for a year of contemplation before a peaceful departure by chloroform. . . . The teacher's life should have three periods, study until twenty-five, investigation until forty, profession until sixty, at which age I would have him retired on a double allowance. Whether Anthony Trollope's suggestion of a college and chloroform should be carried out or not I have become a little dubious, as my own time is getting so short.

At the time Dr. Osler was fifty-six. These whimsical comments brought an avalanche of unfavorable criticism down upon the head of the unsuspecting doctor. Newspapers ignored the facetious nature of the allusions and attacked the speaker savagely for advocating the chloroforming of all men when they reach a certain age. OSLER RECOMMENDS CHLOROFORM AT SIXTY was proclaimed in headlines. Editorials branded Dr. Osler as "a typical soulless product of modern science." It was all taken so seriously by the public that in its issue of March 4, 1904, the

Medical Record printed a statement from Dr. Osler denying that he had ever seriously advocated chloroforming men at sixty or at any other age.

What is the Black Forest?

The Black Forest (*Schwarzwald* in German) is a wooded mountainous region lying parallel with the Rhine in southwestern Germany. Two-thirds of the district lies in Baden, the other third in Württemberg. It is about 100 miles long and 10 to 20 wide and has an area of 1,800 square miles, being considerably larger than Rhode Island. Here the mountains, the highest peak of which is Feldberg with an altitude of 4,897 feet, are cut off sharply on the south by the Rhine and form the counterpart of the Vosges range on the French side of that river. The Black Forest is not, as many suppose, a continuous stretch of woodland, although oak and beech woods clothe the foothills and lower spurs of the mountains and fir forests extend to altitudes of 4,000 feet. It is from the dark hue of the firs that the district gets its name. Because of the cold and raw climate only hard cereals can be grown in the higher altitudes; but in the warmer valleys good pastures and vineyards abound. Numerous mineral springs and watering places, such as those at Baden-Baden, have made the Black Forest a favorite tourist resort. Several of the mountain passes in this district figured in the French Revolution.

What is the meaning of *V.D.B.* on Lincoln pennies?

The letters *V.D.B.* on some Lincoln one-cent pieces minted in 1909 are the initials of Victor David Brenner, the medalist and sculptor who designed the coin. This part of the design was soon withdrawn by the United States Treasury Department and consequently the artist's initials appear on only part of the Lincoln pennies bearing the date 1909. Brenner was born at Shavli, Russia, in 1871, and died in New York City in 1924.

What is the largest species of deer?

The American moose (*Alces americana*), a native of northern North America, is the largest member of the deer family, living or extinct, and has the heaviest, longest and most massive antlers. It is much larger than the caribou and the reindeer and considerably larger than the elk (*Alces alces*) of northern Europe and Asia, to which it is closely related. Occasionally a full-grown bull moose attains the height of seven feet at the shoulders and a total weight of 1,600 pounds. The

antlers, which grow only on the males, may have a spread of six and a half feet. Moose are purplish gray in color. Though imposing in appearance, they are ungainly animals and awkward in gait, because their shoulders are higher than their rumps and their front legs are considerably longer than their hind ones. The moose is a browser and normally feeds chiefly on the bark and lower branches of trees. Its upper lip is extended and forms a proboscis adapted for browsing. In the north woods this muffle is considered a delicacy, the tidbit of the entire carcass. The moose's legs are so long and its neck is so short that the animal has to kneel to graze. *Moose* is both singular and plural. We speak of one moose or ten moose. The term is derived from Narraganset Indian *musa* or *mosu*, "he strips" or "he cuts smooth," alluding to the animal's feeding habits. *Buck*, *doe* and *fawn* are not applied to moose as to many other deer. A male moose is a bull, a female is a cow and a young one is a calf. A thick, pouchlike fold of skin hanging on the throat of the bull is known as the "bell." A place where moose gather in herds in winter to tramp down the snow to get feed is known as a moose yard. A moosecall is a horn of birch bark used by hunters to imitate the roar and bellow of the bull moose. Hunters themselves disagree as to whether the moose is ever fooled by a moosecall. The secret fraternal society known as Loyal Order of Moose was organized at Louisville, Kentucky, in 1888.

Why is purple regarded as the royal color?

Tyrian purple, really a deep crimson, was the most famous of all dyed colors known to the ancients. Legend says this color was discovered near Tyre in Phoenicia on the Syrian coast when a man named Hercules saw his dog bite into a shellfish and stain its mouth. At any rate, the ancients ascribed the discovery of purple to the Phoenicians and it was probably the first dye to be fixed on wool and linen. It was obtained from the tiny cysts near the head in two species of Mediterranean mollusks known to the Romans as *purpura*, from which *purple* is believed to be derived. The secretion was extracted either by puncturing the shellfish or by pounding it entire. Only after exposure to air does the secretion assume its characteristic color. The Belus River in Palestine provided and still provides the shellfish from which the Phoenicians extracted the dye. Shells of these species have been found near ancient dye works at Athens and Pompeii. Each shellfish, or purple fish, as it was also called, yielded only a minute quantity of the dye and by reason of this fact the color was very costly and consequently highly prized by princely and wealthy families. In the Old

Testament purple frequently is mentioned as the symbol of wealth, grandeur and high rank, and in Luke 16:19 Jesus refers to "a certain rich man, which was clothed in purple and fine linen, and fared sumptuously every day." A pound of wool dyed with Tyrian purple was worth the equivalent of \$200 in the time of Jesus. Since consuls wore purple togas and kings and princes dressed in robes of the same color, it was natural that the Roman emperors should do likewise, and gradually purple became not only the symbol of high rank and authority but also peculiarly associated with the imperial office. Suetonius says Nero forbade the use of Tyrian purple dyes by the public. The Byzantine emperors wrote their decrees in purple ink, and Justinian I in 532 A.D. attempted to restrict the use of this color to the emperors. Even today the orthodox archbishop of Cyprus claims the exclusive right to wear the purple robes of the Byzantine emperors and to write his name in purple ink. "The purple" came to signify imperial or royal rank, and "born to" or "cradled in" the purple was said of a child born in an imperial or reigning family. When a man became emperor he "assumed the purple." Although purple is an emblem of penance, the purple costumes of Roman Catholic cardinals as princes of the church are reminiscent of the Roman consular togas. He has been "promoted to the purple" is said of a churchman when he has been made a cardinal. After the Moslems conquered the Near East the art of extracting and imparting the dye was virtually lost and it was not generally known to western Europe until the seventeenth century. Modern purple differs from the ancient Tyrian color and is produced by mixing red and blue pigments.

What does SOS stand for?

SOS, often used figuratively to denote any urgent appeal for help, is the international radio distress signal and has no verbal significance. There is a popular but erroneous notion that these letters represent "Save Our Ship," "Save Our Souls" or "Stop Other Signals," and it is a common error to regard them as abbreviations of some such phrase and in writing them to follow each letter with a period; as, S.O.S. The Italian delegates at the preliminary conference on wireless telegraphy at Berlin in 1903 suggested that ships use SSSDDD as a distress signal, but no action was taken. About that time the Marconi International Marine Communications Company, Ltd., adopted CQ as a "precedence signal" for ships wishing to communicate with shore stations or other ships. In 1904 the Marconi company substituted CD for CQ as the general inquiry and distress call at sea. Later D was inserted and the

call became *CQD*. Popular fancy insisted that *CQD* stood for "Come Quick, Danger," but the signal had no verbal significance except in the imagination of the public. German ships used as a distress signal the letters *SOE* (three dots, three dashes and one dot in the telegraph code), but this signal was unsatisfactory because the final dot was easily obliterated by interference. At the International Radio Telegraph Convention at Berlin in 1906 the German delegates proposed *SOS* (three dots, three dashes and three dots) as the universal distress signal, and it was adopted as of July 1, 1908. All such signals are based on the speed and clarity with which they can be transmitted and *SOS* was chosen because it is easily sent and understood. *CQD* was so firmly established that some operators even after 1908 continued to use it as well as *SOS* to make sure their signals were recognized, but *CDQ* was gradually abandoned, and since the International Radio Telegraph Convention at London in 1912 *SOS* has been used exclusively as the official international radio signal. During the First and Second World wars the Allies used *SSSS* (three dots repeated four times) when a ship wanted to warn other ships that an enemy submarine was near or actually threatening. A popular notion spread that these letters stand for "Submarine Sighted." An international distress call for use in Radio telephony was suggested by the British delegates at the Berlin conference in 1906, but a spoken word for this purpose was not approved until the International Radiotelegraph Convention met at Washington in 1927. Selection of *mayday* for this purpose appears to have been influenced by the fact that the English pronunciation approximates that of the French phrase *m'aidez*, "help me." Domestic and international regulations prescribe how *SOS* in radiotelegraphy and *mayday* in radio telephony are to be used.

Why do Chinese in America send their dead to China?

Many conversative Chinese in the United States and other foreign lands return their dead to China because of their belief in ancestor worship. They want to be reunited in death to their ancestral clan and to receive the reverence paid by descendants to ancestors twice a year. Transportation of bodies to the homeland has no religious significance other than its relation to the traditional respect for ancestors. China has no indigenous religion. Confucianism and Taoism are moral and political philosophies rather than religions. Buddhism, Islam and Christianity were all introduced from abroad. According to Chinese mythology, the world was shaped out of chaos by Pan-Ku, the first conscious being. Ancestor worship in China dates back to pre-

historic times and has been practiced by Chinese regardless of their particular faith. The dead are generally interred in the fairest spots in their native land. Custom requires that no matter where a Chinese may die he must be returned to his place of birth and buried among his people. If this is not done his spirit cannot join the spirits of his forefathers but will wander unknown among strangers. As a rule Chinese who die abroad are not sent to China at once but are buried in cemeteries or placed in vaults. Generally a body is sent back to China only when the deceased has so requested. Otherwise the original burial is permanent. Many Chinese, especially those born abroad, become so thoroughly naturalized that they do not observe this ancient burial custom. The removals are not made by relatives or by religious sects, but by the deceased's tong, clan or social organization. All expenses are borne by the organization with funds raised by voluntary offerings. After the bodies have lain in cemeteries or vaults for a time, usually seven or ten years, they are exhumed and shipped in large numbers by special arrangements with steamship companies. Sometimes shipment is made ten, twenty or even thirty years after death, in which case only the bones are gathered and sent in small containers. Formerly when Chinese coolies were brought to the United States each labor contract provided that in case of death the body should be returned to China. In the 1860's ships frequently sailed from San Francisco to China with cargoes composed entirely of the bones of Chinese. Only the bodies of Chinese who are Buddhists are cremated before shipment. Chinese are not supposed to be buried at sea and China has understandings with other nations according to which the bodies of Chinese who die on shipboard are kept in coffins and returned to China by the next vessel. Pacific ships often carry coffins for this purpose. Formerly many wealthy Chinese bought their coffins long before death and some of them even took them along when traveling.

What is a glass snake?

Glass snake and *jointed snake* are popularly applied to a legless lizard found in the southern United States. This creature looks so much like a real snake that the ordinary person would never suspect that it is not. True snakes, however, do not have eyelids, while true lizards do. The glass snake is an example of a lizard in the process of becoming a snake. It is a connecting link between the true snakes and the true lizards. Its popular name comes from the myth that it can be broken into parts and will later reassemble them. According to the most usual form of the myth, when this creature is struck with a stick

it will disjoint and the parts will wriggle off in every direction and come together again later provided the head part is not captured or destroyed. Some people believe that it is not the head but another section that is endowed with power to control the movement of the other sections—if that section is destroyed the lizard is deprived of the power to reassemble its parts. This myth arose, no doubt, from the fact that the glass snake can, by a sudden twist, shake its brittle tail completely off. It is a wise provision of nature. When closely pursued by an enemy the glass snake drops its tail, which continues to twitch and wriggle. The enemy usually seizes this wriggling tail while the glass snake slips away to safety. It is also a myth that the glass snake later returns and gets its tail. The creature does, however, grow a new tail, but it is smaller and different in color from the original one. If the body of a glass snake is broken in two the reptile will die. Closely related to the American glass snake is the slowworm or blindworm of Europe. Despite its name, this creature is not blind, nor slow, nor a worm. It is really a lizard without visible legs, has tiny eyes, and is agile in its movements. Its long tail breaks off at the least touch—hence its scientific name, *Anguis fragilis*.

What is a pot shot?

A pot shot is a shot taken at a stationary object and usually at close range. Originally the term referred to a shot taken at an animal or bird to “fill the pot,” when food and not sport was the chief purpose. In sports a person who is keener on winning prizes than on the sport for its own sake is known as a pothunter.

Do moths eat clothes?

Adult moths or millers do not eat clothes. Persons unfamiliar with the life cycle of the clothes moth see the adults flying about or resting on garments and get the impression that they do the damage directly. The mouths and stomach of adult moths are not adapted to eating and digesting fabrics. Their life span is brief, usually only a few weeks. Some species feed on the nectar of flowers, while others have such imperfectly formed mouths and stomachs that they are provided with a sufficient food supply to live their short lives and perform their reproductive functions without eating at all. Adult moths are called millers from the fact that the wings and body of many small light-colored species are covered with flourlike scales, suggesting the clothes of old-fashioned millers covered with flour dust. There are some 6,000 species of moths in America alone. The most destructive are the cutworm,

codling, gypsy and clothes moths. People are so much in the habit of referring to the larvae of these insects as moths and to moth-eaten garments that the larvae of the carpet beetle, which attacks the same type of fabrics, are called buffalo moths. The common clothes moth was not native to America but was brought over unwittingly from Europe by the early colonists. In 1946 it was estimated that the yearly damage done by the larvae of the clothes moth in the United States runs as high as 100 million dollars. During her brief life the adult female lays hundreds of eggs in clothing materials and the fabric provides the larvae their food supply. These larvae, really tiny caterpillars, are transformed into pupae, which form the cocoons in which the adult moths develop. In one year the larvae of one female can easily destroy as much wool as a dozen sheep can produce. They are nonvegetarians and will eat fabrics containing wool, fur, feathers, hair and other animal fibers but will not touch cotton, linen, silk, rayon, nylon or other vegetable fibers. The larvae are active at temperatures above seventy degrees. At lower temperatures they are inactive but do not die. Accordingly there is no such thing as a "moth season" at temperatures above seventy degrees. Moth balls of the old-fashioned type, the chief ingredient of which is the petroleum product known as naphthalene, were designed to keep the adult moths from laying their eggs in garments rather than to kill the moths. Household chests were first made of cedar in Virginia because of the beauty and pleasing odor of the wood. Much later it was learned that such chests have a tendency to discourage the visits of female moths looking for a place to deposit their eggs.

Where is Hell's Half Acre?

Often a neighborhood of questionable reputation is called hell's half acre. The phrase was probably suggested by the fact that a burying ground is known as God's acre. It was merely a facetious contrast. During the Civil War a particularly bloody spot on the Wilderness battlefield in Virginia was called Hell's Half Acre. The name is also applied to many places in the United States noted for their curious and interesting geological formations. Chief among these is a scenic area in Natrona County, Wyoming, about forty-five miles west of Casper. It is the product of erosion and consists of a broad gulch, canyon or basin filled with freakish formations resembling columns, pillars, spires, minarets, pagodas and what not, all in many fantastic colors. Originally the earth's outer crust there consisted of strata of soft shale or clay alternating with sandstone. The shales eroded more

rapidly and in many places have left the harder sandstone as caps on the pinnacles of shale. How the name originated is not known. It is a misnomer, because Hell's Half Acre actually covers several hundred acres, perhaps a thousand times as much territory as the name implies. There is a story to the effect that a cowboy named the place after attempting to drive a stray steer from its sultry labyrinths on a hot day. On such an occasion it would be perfectly natural to associate the valley with Satan's official residence. Tradition says the Indians used Hell's Half Acre as a buffalo trap. The hunters on horseback would drive the buffalo herds into the valley, where they were easily captured. In 1924 a 960-acre tract of land including Hell's Half Acre was patented to Natrona County for park purposes.

What are the apes of Gibraltar?

The apes of Gibraltar are monkeys on the Rock of Gibraltar. They are the only species of wild monkey in Europe and are called Barbary apes because they are native to that part of Africa known as the Barbary Coast. The presence of these apes on the European side was formerly believed to prove that Spain and Morocco were linked together by land in the pleistocene period, but the absence of ape fossils in the caves of Gibraltar suggests that these apes may be descended from animals introduced there by the Romans or the Moors. Jebel Musa, a rocky mountain on the African side of the Strait of Gibraltar, is called *Montana de la Monas*, "the hill of the monkeys," by the Spanish because it is inhabited by Barbary apes. The Barbary ape, also known as magot, belongs to the macaque family and is closely related to the baboon. It is about as large as a medium-sized dog, is yellowish brown in color above and yellowish white below and has no tail. Its snout is long and squarish, its face naked and flesh colored except where matted tufts of hair protrude from the cheeks and forehead. It is a terrestrial animal and generally goes about in droves led by a large male. Members of this species are intelligent and are often trained for exhibition purposes. At Gibraltar they live in the caves and crevices in the promontory, especially on "Monkey Rock." The natives in the region say the Gibraltar apes came there through a secret tunnel under the Strait and that they use the same passage to return to Africa to die. These interesting apes, which are privileged characters at Gibraltar, always excite the interest of travelers, and many odd things are told about them. On one occasion, according to a common story, the Spanish prepared to retake the stronghold by surprise. The British sentinel had fallen asleep and the attack might have

succeeded had not a Barbary ape, rummaging for food in the camp, knocked over a pot of beans and waked the sentry. Another version of the story is that a British sergeant observed an ape holding its ear to a drum. Investigation revealed that the noise in the drum the ape was listening to was caused by the Spanish undermining the Rock, whereupon the British countermined, blew up the enemy and saved the fortress. The Gibraltar apes are treated almost like sacred animals. They are jealously guarded by the British soldiers, who see that they get plenty to eat. To kill one of these apes, or even to annoy one, is a serious offense. "The British will leave when the apes do," is a saying among the Spanish in the vicinity. When the Barbary ape colony dwindles in numbers to the point of extinction, the British, taking no chances with the proverb, secretly import apes from Tangier to replenish the stock. This was done in 1740 and in 1930. In 1941, as an emergency measure during the Second World War, all animals at Gibraltar were ordered killed—all but the sacred apes.

What is the difference between beer and ale?

Beer and *ale* are of Teutonic origin and occur in Anglo-Saxon as *beor* and *calu*. Formerly they were synonymous and they still are often used interchangeably. In 1872 M. Schele de Vere, in *Americanisms; the English of the New World*, wrote: "Beer, without the addition of a descriptive noun, is very rarely heard in America, *ale* being generally used where the Englishman would say *beer*." The popular beverage served in English pubs called beer or bitter is not an imitation of German lager beer (*Bier*), as American beer is, but what Americans call ale. Of *ale* and *beer* H. W. Fowler wrote in *Modern English Usage*: "In the trade, and in statistics and the like, the two words are distinguished in meaning. But in ordinary use, as at table, both denote the same thing, including the pale and excluding the dark varieties of malt liquor; the difference is that *beer* is the natural current word, and *ale* is a Genteelism." *Beer* is used generically to denote all the fermented malt beverages known specifically as beer, ale, porter and stout, which are made from essentially the same ingredients. Malt is grain, usually barley, that has been germinated. In making malt the grain is soaked in water and kept damp until it begins to sprout. When the sprouting has proceeded to a certain point the grain is dried and the process of germination halted. Malt acts to convert the starch in the grain into dextrose, from which alcohol is produced. Corn, rice or some other grain or cereal is usually added to the malted barley. Hops give the beverage its characteristic flavor and aroma and contribute

to its keeping qualities. As made in America ale differs from beer because different types of yeast are used, fermentation takes place at different temperatures and a different quantity of hops is used. Ale is fermented at a higher temperature, contains more hops and is sweeter than beer. British porter and stout are varieties of strong, dark, heavy ale. As a rule ale has more body to it than beer has. Even the federal government and the American brewing industry find it hard to draft definitions distinguishing clearly between beer and ale. The common impression is that the alcoholic content of ale is greater than that of beer. That is generally but not necessarily so. In the United States the percentage of alcohol in both beer and ale ranges from 3 or 4 to 9 percent by volume. The alcoholic content of a beverage is about .1 percent more when the percentage is based on volume than when it is based on weight. Beer having 5 percent of alcohol by volume would have about $4\frac{1}{2}$ percent by weight, and liquor containing 45 percent alcohol by weight would contain about 50 percent by volume.

What is the most northern point of land?

The most northern point of land is believed to be Cape Morris K. Jesup on the northeastern extremity of Greenland, which is under the sovereignty of Denmark. It is at 83 degrees and 39 seconds north and is 440 miles from the North Pole. In 1901 Commander Robert E. Peary, the arctic explorer, killed a musk ox within half a mile of this point. The cape was named after Morris K. Jesup, a New York banker and philanthropist, who helped finance several of Peary's expeditions into the far North.

Do bats carry bedbugs?

That bats carry bedbugs is a rather common belief. It arises from the fact that many bats are infested with a species of insect very similar to but distinct from the common bedbug. Bugs resembling bedbugs found on bats, swifts, swallows, pigeons and poultry, according to entomologists, belong to species peculiar to those creatures and do not ordinarily attack human beings. Both bats and birds have a high blood temperature and their pronounced body warmth attracts such forms of insect life. There is, however, no evidence that bats ever carry common bedbugs. "The bat bedbug," says the United States Department of Agriculture, "is very frequently found in bat roosts, and when these roosts are in the attics or walls of houses the insects have been known to stray into bedrooms and cause some annoyance to the occupants. So far as we know, the bat bedbug never becomes

a serious pest in houses unless the bats are exceedingly abundant. . . . Swallows and bats are often killed because they are thought to spread bedbugs. This is a mistake. Both swallows and bats are sometimes attacked by insects that do in fact resemble the despised and detested bedbug, but these insects are definite and distinct. One variety preys on swallows and another on bats, but neither attacks men nor has the same habits of life as the bedbug." There is a story, perhaps unfounded, that bedbugs were first observed at Strasbourg in northeastern France and that they were carried to other parts of the world in the bedding of the Huguenots when they were expelled from the country in the seventeenth century. Owing to their ability to endure long fasts, bedbugs have followed man virtually everywhere he has gone and they are now world wide in distribution.

What is the difference between flotsam and jetsam?

Miscellaneous articles and odds and ends of little value are often referred to as flotsam and jetsam, a phrase borrowed from English common law. *Flotsam* and *jetsam* now mean about the same and are usually linked together. Originally, however, maritime law distinguished clearly between the terms. Unmarked goods cast from a ship are known as wreck. Such goods when found may be claimed legally by the government, the local authorities, the owner of the land where they lodge or the finder, depending on the law in effect at the place and time. *Jettison* (from Latin *jactationem*, "the act of throwing") is applied to the act of throwing all or part of a cargo into the sea to lighten the ship in time of danger from the elements or from an enemy. Flotsam, jetsam and lagan are all goods lost at sea. *Flotsam* is from Latin *flottare*, "to float." In the words of Sir Edward Coke, "when a ship sinks or otherwise perishes, and the goods float on the sea," such goods are called flotsam. *Jetsam* is derived from Latin *jactare*, "to throw." To quote Coke again, "when goods are cast out of a ship to lighten her when in danger of sinking, and afterwards the ship perishes," such goods are called jetsam. The original sense of *jetsam* was goods that had been jettisoned or thrown overboard. Thus in legal usage *flotsam* and *jetsam* came to describe unmarked goods in respect to their position when found. Flotsam was unmarked goods found afloat and jetsam was unmarked goods found at the bottom or on the land after being cast ashore. Goods that sank to the bottom with the ship and accordingly could be identified were known as *lagan*, which is believed to be derived through Scandinavian from the same root as *lay* and *lie*. Later *lagan* also embraced goods found on the shore, afloat

or at the bottom if they contained a mark of ownership. Lagan was not wreck but the undisputed property of the owner. One of the traditional perquisites of the lord warden of the Cinque Ports is title to all "flotsam, jetsam and lagan" found within his jurisdiction. The compensation allowed by law for saving a ship or cargo from capture, shipwreck or fire is known as salvage. A salver has a lien on such property that takes precedence over all other rights until the salvage is paid.

Why are Nova Scotians called Bluenoses?

Bluenose, it is supposed, became associated with Nova Scotia and its inhabitants as the result of a common variety of potato that at one time was exported in large quantities from that province to New England. The Yankees associated the name of the potatoes with the people who raised them. This particular variety was popularly known as the bluenose because one end was bluish or purplish in color. In time *Bluenose* was accepted by the Nova Scotians as their favorite nickname, and now it is widely used in connection with sports and as the name of trains, ships, etc. It is not probable, as sometimes stated, that the nickname is derived from the fact that the typical Nova Scotian, owing to the northern latitude of the province and the cold winters, is often given a blue nose by Jack Frost. Nor is it probable that the nickname has any relation to *bluenose* in the sense of a puritanical or snobbish person. Thomas Chandler Haliburton, who was a native of Nova Scotia, wrote in *The Clockmaker, or Sayings and Doings of Samuel Slick of Slickville* (1837):

"Pray, sir," said one of my fellow-passengers, "can you tell me the reason why the Nova Scotians are called *Blue-noses*?"

"It is the name of a potato," said I, "which they produce in the greatest perfection, and boast to be the best in the world. The Americans have, in consequence, given them the nickname of *Blue Noses*."

By extension the nickname is now frequently applied to the inhabitants of all the maritime provinces of Canada—Prince Edward Island and New Brunswick as well as Nova Scotia.

How did the Arabic numerals originate?

The adoption of Arabic numerals was one of the greatest forward steps ever taken in mathematics. The Greeks and Romans, although they made notable advances in mathematics, were greatly handicapped for want of convenient mathematical symbols. Symbols closely resembling most of the Arabic numerals occur in inscriptions written in

caves in India during the third and fourth centuries A.D. From India the symbols were carried by traders and scholars to Persia, Assyria, Arabia, Egypt and the rest of the Moslem world. *Hindu-Arabic* would be a more accurate name for the numerals, but they are commonly called Arabic because they were introduced into Europe from the Arabs or Moors of North Africa. A manuscript written in Spain in 976 supplies the earliest positive evidence of the use of the Arabic system of numerals in Europe. The figures 1, 2 and 3 did not originate in the same way that the other figures of the system did. They are cursive forms of primitive line symbols, originally suggested, no doubt, by counting on the fingers. Among the Hindus 1 was written as one short horizontal line, 2 as two lines one above the other, and 3 as three such lines, just as the Romans wrote I, II and III, using vertical lines. Through centuries of usage these crude symbols developed into 1, 2 and 3. The other six figures, 4, 5, 6, 7, 8 and 9, seem to have been adopted more or less arbitrarily in northwestern India. In the early stages of this system of numerals the symbol 0 was unknown. The first nine figures were already in general use in India before the cipher was devised and consequently the figures had no place value. Whether the symbol 0, perhaps the greatest single contribution ever made to mathematics, was invented by the Hindus or by the Arabs is not known. It was in use in India as early as the ninth century and may have originated among the Hindus. *Zero* and *cipher* are both from Arabic *sifr*, which in turn is from Sanskrit *synyan*, "void." The symbol was conceived as an ideogram representing nothingness encircled by a line. The earliest known printed use of *zero* is in a treatise on mathematics published at Florence in 1491. In English the symbol is often called ought, nought or naught. Arabic numerals were introduced into England in the fourteenth century but were not generally used until after the introduction of printing. Up until the sixteenth century the English continued to keep their accounts in Roman numerals. The first nine Arabic numerals are called digits, from Latin *digitus*, "finger," alluding to the primitive method of counting on the fingers, which was the origin of the decimal system.

How is *Houston* pronounced?

Northerners often go wrong on the pronunciation of *Houston*, the name of the largest city in Texas. The correct pronunciation is *hewstun*. That is also the way the name was pronounced by the soldier and statesman after whom the city was named. Frequently persons from other sections of the country, particularly the Northeast, mis-

pronounce it *house-tun*. On April 21, 1836, General Sam Houston (1793-1863) and his Texans defeated the Mexicans under Santa Anna in a decisive battle on the San Jacinto battlefield near the site of the present city of Houston. Sam Houston was a descendant of John Houston, who came to America from Northern Ireland in 1730 and who, after tarrying in Pennsylvania long enough to marry off a son and two daughters, finally settled in the upper Valley of Virginia. It is supposed that *Houston* originated about 1153 A.D. when Hugh Padvinan, who had obtained the barony of Kilpeter in Lanarkshire, Scotland, founded Hugh's Town or Hughestoun. Members of the branch of the Houston family who remained in the Keystone State and elsewhere in the North, that is, the descendants of the first immigrant's son John, generally pronounce the name *house-tun*. That is how it was pronounced by Rear Admiral Edwin Samuel Houston, of Pennsylvania. The name of Houston Street in New York City is locally pronounced *house-tun*, and on early New York maps this name occurs as *Houstun*, an old Scottish spelling. In a general way it may be said that *Houston* is *hews-tun* in the South and West and *house-tun* or *how-stun* in the Northeast, although there are many exceptions. A still different pronunciation prevails in Great Britain and is not uncommon in the United States—*hoos-tun* or *hoo-stun*. It is presumed that a person may pronounce his name any way he desires, the only guide in the pronunciation of personal names being the preference of the persons bearing them. Likewise local usage is generally respected in pronouncing place names.

Why is the speed of ships reckoned in knots?

The knot is a unit of speed equivalent to one nautical mile an hour. Strictly speaking, it is not a unit of distance and it is incorrect to use the term as a synonym of "nautical mile." Instead of saying a ship is traveling eight knots an hour we should say simply it is traveling eight knots. Reckoning the speed of ships in knots is a survival of the earliest method of ascertaining the speed of vessels. Originally a small log of wood was thrown overboard from the bow and watched to see how long it would take to pass the stern. Since the length of the vessel was known it was possible to calculate how long it took the ship to pass a given point and that showed roughly how fast the ship was going. By the fifteenth century this method had been considerably improved. The speed of a ship was determined by casting out a line with a triangular piece of wood weighted with lead attached to the end to keep it upright and to retard its passage

through the water. The weighted float was called a log from the actual log of wood originally used, and the line was called the log line. When the line was paid out freely from a reel on board, the log remained stationary for all practical purposes. The log line was divided into sections, called knots because they were marked by pieces of cord worked in between the strands of the line. Perhaps at first actual knots were tied in a rope. The distance between the knots bore the same ratio to a nautical mile as 28 seconds does to an hour (3,600 seconds); that is, the knots were 47 feet, 3 inches apart. A nautical or geographical mile is $1/60$ of a degree or one minute on the earth's equator and actually varies according to latitude. But for practical purposes a nautical mile is assumed to be 6,080 feet, or 1.15 statute or land miles. The number of knots that ran off the reel in 28 seconds by a sand-glass showed with fair accuracy the number of nautical miles the vessel was traveling an hour. A nautical mile is nearly one-sixth greater than a land mile, so that a ship traveling 30 knots is traveling 30 nautical miles and about $34\frac{1}{2}$ land miles an hour. Although the knot as a unit of speed is still used, the old method of measuring the speed of vessels has been superseded almost entirely by automatic logs that register on dials. *Knot* and *nautical* are not related etymologically. The former is from Anglo-Saxon *cnotte*, knot in the sense of inter-twined cord, while the latter is derived through Latin from Greek *nautikos*, an adjective formed from *naus*, "ship," which is also the source of *navy* and *naval*. In olden times the log or speed of the ship in knots was first written down on a piece of board known as the log-board and the records were later entered in a book known as the logbook, which in time was shortened to log. A ship's log today is an official journal of the vessel's speed, progress and location, weather conditions, behavior of the crew and anything else worthy of note.

How did *above the salt* originate?

This phrase is believed to date from feudal days when master and men, lord and retainers, all ate with their guests at one table in a great dining hall and a large saltcellar, called a saltfoot, was placed near the middle of the board to mark the division between the high and low classes. Places at the upper end of the table, that is, *above the salt*, were assigned to lords, gentlemen, masters, honored guests and others of distinction, while places at the lower end of the table, that is, *below the salt*, were given to inferiors, dependents, retainers and poor relations. Thus *above the salt* came to signify a position of honor and *below the salt* a place of inferiority. In those days, before

refrigeration and other methods of preserving and seasoning foods, salt was a much more important article on the table than it is now. Even in early Colonial days in America it was customary in the better-class homes to have a large, metal, three-legged saltcellar, known as the standing salt, on the family dining table, but by that time the social distinction between those who sat above and below the salt had disappeared, and *above the salt* and *below the salt* survived only in their figurative senses. In *Westward Ho!* (1855) Charles Kingsley wrote: "We took him above the salt and made much of him."

Why are maps made with north at the top?

Almost all modern maps and geographical charts are made with the north at the top. Maps with other directions at the top are exceptional. No scientific principle makes this particular orientation essential and it is merely a convenient practice based on centuries of usage. Most of the Greek and Roman map makers placed east at the top of their maps because it was the direction of the rising sun. As a rule medieval Christian cartographers followed the same custom. Their belief that the original Garden of Eden lay on the eastern border of the known world supplied a further incentive toward this orientation. Geographers who made maps with east at the top were guided by the same principle that led architects to plan churches and cathedrals with the altar at the east end. There were a few exceptions. There is a map of the world in the British Museum made in Rome in 1546 with west at the top. The draftsman apparently drew it west and east because he wished to fit the British Isles into an atlas that was wider than it was high. Another map in the same collection was oriented with south at the top. It was made in 1492, before the convention was well established that maps should be made with the north up and the south down, and it was the natural orienting for a German cartographer to adopt in preparing a map showing the way to Rome from Germany. Strangely enough, orienting toward the south was the general custom among the Arab map makers of the Middle Ages. The modern custom of orienting maps with the north at the top was undoubtedly suggested by Ptolemy, the Greek geographer who lived at Alexandria in the second century A.D. He made his maps with north up and south down. With the revival of Ptolemy's geography during the Renaissance the orientation adopted by him gradually became an established custom in Europe. The fact that most of the known land area of the earth was in the Northern Hemisphere encouraged the practice, which was further confirmed by the increasing use of

meridians and parallels in cartography. North is at the top of the maps of the British Isles made by Matthew Paris in the thirteenth century, and the same orientation was used in sailors' charts dating from about 1300. It was natural that the globe makers of the sixteenth century should observe the same custom and place the North Pole on the upper hemisphere and the south pole on the lower. That is how it happens that we say "down South" and "up North" and regard the North Pole as the top and the South Pole as the bottom of the earth. Nowadays the average American in speaking of the northern and southern states says "in the North" and "in the South"; but until the time of the Civil War the phrases were "at the North" and "at the South." The country was settled largely from east to west and easterners say "out West" and westerners say "back East." Oddly enough, New Englanders refer to Maine as "down East," and elsewhere in the eastern states all of New England is often designated "down East." It is an American idiom hard to account for. Perhaps the underlying thought of *down* in the phrase was originally "down on the coast" in contrast to the interior or hinterland. Contrary to a popular impression, *down East* does not go back to Colonial times. The earliest known use of the phrase is dated 1825.

What species of fish shoots jets of water at insects?

A species of small fish (*Chelmon rostratus*) found in India and elsewhere in the Orient is remarkable for the fact that it obtains food by knocking insects into the water by squirting a jet of water at them. When one of these fish sees an insect resting on a plant or other object over the water it cautiously approaches within a few feet of its prey and ejects from the mouth a tiny stream of water at it, wetting the victim and causing it to fall into the water where it is quickly seized. It is said that this species, which attains a length of only six or seven inches and has a tubelike mouth, can throw water five or six feet and can aim it accurately for a distance of three. Some authorities assert that the water thrown is hardly more than a few drops. Because of its dexterity in capturing insects by this unusual method this species is often kept in aquariums, where it does not seem to object to an occasional demonstration of its skill for the entertainment of onlookers. Individuals of this species have been known to knock a spider out of its web several feet above the water. *Rostratus*, the second element in the scientific name of this fish, signifies "beaked" and refers to its characteristic long beak. It was formerly supposed that squirting water at insects was a property of a species of *Toxotes* ("archer"), which

is also native to the East Indies and which in consequence was named scientifically *Toxotes jaculator* and popularly archerfish. Further investigation, however, indicates that the archerfish was misnamed as the result of mistaken identity. It does not thus capture insects and is not equipped with a "water pistol." Whether more than one species of *Chelmon* has this curious habit is a disputed question.

Do wagons pull harder near the tops of even hills?

Theoretically less power is required to pull a carriage near the top of a hill of even slope than is required farther down, because the force of gravity decreases as the carriage gets farther from the center of the earth. For the same reason an object weighs less at high altitudes than it does at sea level. In the case under consideration, however, the hill itself has some attraction that offsets slightly the decrease in the earth's gravity. Of course the difference is negligible for all practical purposes. The fact that motorcars lose momentum and horses become exhausted the farther they proceed up a hill accounts for the popular belief that a carriage pulls harder near the top.

Why are butterflies so called?

Butterfly has given etymologists considerable trouble and several theories have been advanced to account for its origin. It is derived from Anglo-Saxon *buter-flege*, "butter fly," and has been applied to a family of large-winged insects since the time of Chaucer if not earlier. The history of the word as recorded by the Oxford dictionary argues strongly against the popular theory that *butterfly* is merely a corruption of *flutter fly* or a transposition of the letters in *flutter by*. In Low German and Dutch folklore we find the belief that various kinds of moths and butterflies hang about dairies and steal butter and milk and in consequence are popularly called "butter birds" and "milk thieves." Some authorities suppose the butterfly was originally so named from this belief, which seems to have existed in England also. Others are of the opinion that the name was suggested by the common yellow or butter-colored species, or by the yellowish excrement of these insects. Although some species are believed to live nearly a year, the average life span of butterflies is probably not more than a few weeks. A species native to New Guinea, the largest known, has a wing spread of eleven inches. Many species are odorless, while others have a fragrance resembling that of flowers. The brilliant colors in butterflies are produced in two different ways. In some cases the innumerable tiny scales are pigmented and the colors are produced by the re-

flection of light waves; in others delicate ridges on the scales are so arranged that the refraction of light causes the color effects, just as the brilliant colors of the disks in the black train feathers of peacocks are produced by refraction of light rather than by simple reflection. The wings of the gorgeous *Morpho* butterfly of Brazil were so widely sought by souvenir makers at one time that the government restricted the capture of these insects. James Joicey, who died in 1932, collected 1,500,000 butterflies and went bankrupt three times in the process. His collection was acquired by the British Museum.

How did the Sam Browne belt originate?

The Sam Browne belt, a broad leather waistband with a light strap over the right shoulder, received its name from its originator, General Sir Samuel James Browne (1824-1901), an India-born British army officer, who distinguished himself in the Indian service. In the fall of 1858, during the Indian Mutiny, Browne, then a captain in a Bengal regiment, had his left arm severed at the shoulder by a sepoy's sword while engaged in hand-to-hand fighting in a skirmish near the village of Philibhit. Browne continued in active service, received numerous decorations and rose to the rank of general. His bravery in battle became a byword among the natives, who called him "Sam Brun Sahib." Just when and why Browne devised the belt that bears his name is not known. According to one story he sought merely to improve the clumsy method of carrying the sword by British officers, and according to another he was prompted by the loss of his left arm to devise a new belt to aid in supporting his own saber. At that time an officer carried his sword loosely in a scabbard hung from the left side with two slings. When walking he had to keep his left hand on the hilt to prevent the sword from dangling between his legs and tripping him. It is generally supposed that since General Browne had no left hand he devised a belt that would hold up the sword firmly against the left side and parallel with the left leg. The Sam Browne sword belt, with some modifications, became standard for British officers in 1900, the year before General Browne's death, and was adopted in the French, Italian, Belgian and other armies. It was widely worn by American officers long before it was officially sanctioned by both the United States Army and the Marine Corps during the First World War, when commissioned officers in both services were ordered to wear Sam Browne belts to enable Allied officers and enlisted men to distinguish them from enlisted men. On July 10, 1919, General John A. Lejeune, commander of the 2nd Division in

France, ordered all officers to wear Sam Browne belts when traveling with troops. In 1921 this belt was made standard equipment and became "Belt, Officers Model, 1921." The United States War Department in 1941 ruled that the Sam Browne belt was to be worn by officers only when unarmed. The next year this belt ceased to be a required article of uniform, and officers were given the option of wearing cloth belts in lieu of it because the solid leather and brass buckles were made of critical materials. It is erroneous to suppose, as many writers do, that the Sam Browne belt was devised by Colonel Samuel Haslett Browne, who was born in 1850 and who also distinguished himself in the Anglo-Indian service.

Who invented the seaman's compass?

Nobody knows who invented the seaman's or mariner's compass. It was a product of the necessities of navigation and its early history is obscure. That the invention of an instrument as important to commerce and civilization should be claimed by many peoples is only natural. Volumes have been written to prove the claim of one nation or another to the invention of the device that made the open seas highways of commerce. Different writers have ascribed it to the Chinese, Hindus, Persians, Arabs, Greeks, Romans, Etruscans, Finns and Italians. It is possible that the compass, in its crudest form, developed independently in different parts of the world. Chinese writers say there is a legend that their people employed compasses as early as 2364 B.C. There is some evidence that Chinese mariners used some sort of direction-finding devices between 300 and 800 A.D., and it is believed that the Hindus, Persians and Arabs also had compasses at a very early date. The magnetic properties of magnetite or loadstone were observed in ancient times and the earliest compasses consisted of a magnetized needle attached to a splinter of wood floating in water. Once mariners learned that one end of the needle would invariably point in the direction of the polestar, the ultimate development of the compass was assured. Such knowledge would gradually find its way to all seafaring peoples. One theory is that the floating compass was developed in China or India and was carried from there through Persia to the ports of Arabia and the Levant, whence it readily found its way into Europe. What appears to have been the floating compass is referred to in a Latin manuscript supposed to date from the third century A.D. A reference in *Tresor*, a poem written by a Florentine named Brunetto Letini about 1248, indicates that the floating compass was in common use on European ships in the thir-

teenth century. The early history of the pivot-needle compass, consisting of a magnetized needle turning on a pivot instead of being attached to a float, is likewise shrouded in mystery. This type of compass is mentioned as early as the twelfth and thirteenth centuries. Although these earlier references seem to dispose of the story that the pivot-needle compass was invented in 1302 by an Italian named Flavio Gioia, who was probably a fictitious character created as the result of an error, the Italians were early improvers of the compass, if they did not actually invent it. In the fourteenth and fifteenth centuries Venice, Genoa and other Italian cities were manufacturing these instruments for sale. Little credence can be given to the story that the compass was introduced into Europe from China by Marco Polo, because the Chinese were still using the floating-needle compass after the Italians had developed the pivot-needle instrument to a considerable degree of perfection. The facts given above also seem to dispose of the legend that the compass was either invented or introduced into Europe by the English monk and philosopher Roger Bacon (1214-1294). The notebooks of Leonardo da Vinci (1452-1519) show that he designed a compass.

How did *trivial* originate?

Trivial is from *trivialis*, the Latin adjective formed from *trivium*, which in turn is derived from *tres*, "three," and *via*, "road" or "street." It signifies literally "three roads." Originally *trivial* meant "belonging to the crossroads" or "the place where the roads meet" and was applied to things regarded as common, ordinary, familiar or trite. Crossroads and street-corner gossip and talk is proverbially commonplace and trivial. From this application the word naturally acquired the secondary meaning of slight, trifling, inconsiderable or unimportant. During the Middle Ages the part of a university curriculum embracing grammar, logic and rhetoric was called *trivium*, while that part embracing music, arithmetic, geometry and astronomy was called *quadrivium*. In other words, the three-road way led to the lower division of the seven arts, while the four-road way led to the higher division.

Do birds make consonant sounds?

Vowel and consonant letters are often employed to indicate the characteristic songs, calls and notes of birds just as they are to indicate the pronunciation of words. But resemblances between the utterances of birds and the spoken word are largely fanciful, and even those

species that are reputed to talk, such as parrots, are incapable of uttering sounds correctly described as consonants. The vocal organs of birds are not adapted to the utterance of true consonants as they are known to human speech, and human beings merely imagine that birds articulate and enunciate words. The sound organs of a bird are quite different from those of a man. In man the vocal chords are in the larynx at the upper end of the windpipe; in birds the larynx contains no vocal cords. The voice or "musical box" in birds is a special organ at the lower end of the windpipe called the syrinx and is not found in human beings. Many birds have been given names fancied to resemble their calls. Some naturalists interpret the note of the swamp robin as *tow-hee*, and the bird has been named the towhee; but it is also called the chewink, because others interpret the same note as *che-wink*. This difference is due to the fact that birds, like ventriloquists, utter only vowel-like sounds, and leave the imagination of the listener to supply the consonants from rather indistinct hints. Ventriloquist is derived from Latin *venter*, "belly," and *loqui*, "to speak," and literally means one who speaks from the belly. Ventriloquists have difficulty with such consonant sounds as *p*, *b*, *m*, *w* and other nasal and labial sounds because they are articulated chiefly with the lips. We often hear it said that this or that species of bird can "throw its voice like a ventriloquist." As a matter of fact this characteristic is common to most species of birds. Both the songbird and the ventriloquist can create the illusion of loud or soft and open or muffled sounds as well as of distance. That is why it is difficult to locate a concealed bird by its song. A bird's song is not a song in the sense that we use that term for human speech. It is impossible for a human being to reproduce exactly the tone of a bird either by means of his vocal cords or by the use of words or a phonetic combination of letters and symbols. One cannot write down the song of a bird any more than he can write down in words the tones of a violin or a flute. The closest human approximation to bird notes is through whistling, rather than talking, and imitators of bird songs generally resort to whistling. Perhaps the voice of the crested myna of southeastern Asia resembles the human voice more closely than that of any other bird, including the parrots. The tendency to humanize birds has led to all sorts of stereotyped renderings of their calls in print. The characteristic sounds or calls attributed to common birds are not the same in all languages. For instance, the English think the common European raven says *caw*, *caw*, while the Italians think it says *pork*, *pork*. Once we get the notion that a particular species of bird says certain words it is hard to divest ourselves of

the preconceived notion and to listen to the call with impartial ears. The common Virginia quail does not utter true consonant sounds, but we have been told that it says *bobwhite* and we imagine that it actually does. Likewise, the whippoorwill was so called because somebody once fancied that its call consists of the words *whip poor will*, which, of course, it does not. *Quack quack* is the conventional rather than the actual sound made the domestic duck. To one observer the guinea fowl says *buck-wheat, buck-wheat*; to another, *come-back, come-back*, and to still another, *pot-rack, pot-rack*. The fact is these birds utter only vowel-like sounds and the consonants are supplied by the listeners. Other birds that were named after the sound they are supposed to make are the cuckoo, the bobolink, the chickadee and the peewee.

Do dragonflies sting?

The large, gauze-winged insects known as dragonflies do not have stingers, as popularly supposed, and they are perfectly harmless. For some reason or other these interesting insects have been charged in folklore with many crimes and questionable practices of which they are entirely innocent. They are called horse stingers and flying adders because they are erroneously believed to sting, and the names snake feeders and snake doctors are applied to them on the false theory that they administer to the culinary and medical wants of reptiles. In fact *dragon* itself is from Greek *drakon*, "serpent." To cap the climax dragonflies are charged with sewing up the ears of naughty children and are called devil's-darning-needles in consequence. Adult dragonflies, of which there are several hundred species in the United States alone, fly with great speed and have the unusual ability of darting backward and forward without turning. They feed on mosquitoes, gnats and other small insects that they capture on the wing. The prey is seized by the six legs, especially adapted to that purpose, conveyed to the mouth and eaten while the dragonfly is in flight. The young live in water until their wings are fully developed.

How did *give quarter* originate?

Several theories have been advanced to account for the origin of the military phrase to *give quarter*, meaning to spare the life of an enemy in one's power. In 1611 Randle Cotgrave in his French-English dictionary defined *quartier* as "quarter, or faire war, wherein souldiers are taken prisoners and ransomed as a certainte rate." A French writer named De Brieux asserted in 1672 that *to give quarter* was suggested

by an agreement made between the Dutch and the Spaniards, during their wars in the latter part of the sixteenth century, whereby the ransom of a captured officer was to be a quarter of his yearly pay. Thus, according to this theory, when a soldier in the power of his enemy begged for "quarter" he offered his captors a quarter of his pay to spare his life, and the captors refused "to give quarter" when they rejected the offer. But this theory, as the Oxford dictionary points out, is at variance with both the sense and the spirit of the phrases *to give quarter* and *to receive quarter*. Towns and camps were often divided into sections called *quartiers* by the French, and English *quarters* in the sense of a place is supposed to be from this source. Quarters were lodging in a quarter of a town or camp. When a soldier or seaman was to be punished he was sent to "his quarters," which may have suggested *quarter* in the sense of a prison or place of confinement. Since the tents or barracks where soldiers are lodged, and the place where seamen sleep on shipboard, are called "quarters," it is more probable that *give quarter* originally referred to the sending of captured troops to an assigned place in a camp or fort to be held until liberated, ransomed or otherwise disposed of. Therefore, if this theory is correct, giving a soldier quarter at first meant simply sending him to the quarters of his captors, while to refuse him quarter meant to dispatch him without mercy. One other theory deserves mention. *Quarter* also signifies peace, amity or friendship. It has been suggested that in *to beg quarter* the term was originally employed in this sense and the phrase meant simply to ask for peace. *Quartermaster* was used on ships as early as the fifteenth century to denote a petty officer. Its military sense dates to about 1600. The quartermaster of an army was originally an officer whose duty was to provide quarters or shelter for the troops. Nowadays the quartermaster corps provides not only quarters but also clothing, food and supplies other than weapons and ammunition.

Is the zebu found in the wild state?

The zebu, *Bos indicus*, better known as the Indian ox, exists only in the domesticated state. No closely related fossil ancestor or living wild form has been found. This useful animal has been kept since ancient times in India, China, the East Indies, Madagascar and East Africa as a source of milk and meat and for riding and draft purposes. The sacred bulls of India are of this species. There are many different breeds varying widely in size and color. *Zebu* is the Western, not the Oriental, name of the animal. That term was first applied to it by the French naturalist Georges de Buffon (1707-1788), who saw a "Brahminy

bull" at a French fair in 1772. The exhibitors told the naturalist that the animal came from Africa, where it was known as a *zebu*. No such word has been found in any African language. Some authorities have tried but not very convincingly to trace it to a Tibetan word meaning "hump." The Brahman ox is usually characterized by small size, light color, short horns, drooping ears, a large dewlap and a hump over the shoulders. For more than a century Brahman cattle have been interbred with range cattle in the Gulf coast region from Florida to Texas to produce a hardy, fast-growing strain of beef cattle better able to withstand heat, intense sunlight, humidity, diseases, pests and drought. The chief difficulty with such interbreeding thus far has been the necessity of continual crossing. Similar interbreeding of Indian cattle with other breeds is practiced in Brazil, Peru and other South American countries to obtain strains adapted to tropical climatic conditions. More recently American dairymen have undertaken to combine the milk-giving qualities of common dairy cattle with the hardiness of Indian cattle by crossing the two types.

Why was the leaning tower of Pisa built?

The leaning tower at Pisa, Italy, is the detached campanile or bell tower of the cathedral beside which it stands. During the Middle Ages steeples and bell towers were often built separate from the churches so that the ringing of the bells would not disturb the worshipers within. The leaning tower at Pisa is a beautiful eight-story circular structure consisting of marble walls surrounded by a series of arcaded galleries. On the top floor is the belfry containing seven huge bells, the largest weighing 12,000 pounds, which are now rung together only a few times a year because of the undesirable effect their vibration might have on the tower. The tower is $57\frac{1}{2}$ feet in diameter at the base and about half that at the top. It is 179 feet tall and now deviates from the perpendicular about $16\frac{1}{2}$ feet. Many people erroneously suppose the tower was purposely built to lean. According to a legend one of the architects so designed it to commemorate the fact that he was a hunchback! As a matter of fact Bonnano of Pisa and William of Innsbruck, who began the structure about 1173 A.D., intended to build a perpendicular tower. White marble for the purpose was transported from the Campo quarries on Elba, the tiny island between Corsica and the Italian mainland that was the "thumbnail kingdom" of Napoleon during his first exile. The pilings on which the walls were set did not reach firm soil and when the tower was about thirty-five feet high the subsoil of sand and clay began to sink and caused the structure to

tilt toward the south. Heavier marble was used on the north side and the south side was built up to continue the courses of masonry on a level, but again the foundation yielded slightly and work on the tower was suspended for sixty years. When it was finally completed the tower was out of the true vertical and had a visible slant that increased with time. The spiral stairway of 300 steps inside was so constructed that the weight was greater on the north side than on the south, and even the bells were so mounted as to give added stability to the leaning structure. Infiltrating water from numerous springs continued to undermine the foundations and for many years pumps were used to remove the water. In Mussolini's time a committee of engineers and architects was appointed to investigate the condition of the building and to suggest methods of checking further leaning and preventing its eventual collapse. The commission reported that between 1918 and 1929 the tower increased its inclination one-third of an inch, and that during the last 100 years the leaning had increased a foot. A leaning structure whose parts are firmly bound together will continue to stand so long as a vertical line drawn through its center of gravity passes within the base. The commission estimated that if the inclination of the tower increased about one foot more the vertical line of its center of gravity would fall outside the supporting foundation and the walls would begin to crumble and fall. Unless something were done to avert further inclination, declared the commission, this condition might be expected in about 300 years. Therefore the experts recommended that the surrounding soil be reinforced by the gradual injection of hardening material such as cement. There are several other tilted towers in Europe. One at Saragossa, Spain, is said to deviate farther from the perpendicular than does that at Pisa. There are two such twelfth-century towers at Bologna, Italy. Asinelli, 320 feet high, is four feet out of plumb, while Garicenda, 321 feet high, is ten feet out of plumb.

What was the capacity of the Colosseum at Rome?

Estimates of the total capacity of the Colosseum at Rome range from 45,000 to 100,000 spectators; but most competent observers who have carefully examined the ruins and studied the records are of the opinion that the great amphitheater in its original condition had a seating capacity of about 45,000 or 50,000 and standing room for about 20,000 or 25,000 more, making a maximum of 75,000. It appears that the ancient Roman writers had a tendency to exaggerate the number of people the Colosseum would accommodate at one time. About one-

third of the original structure remains and the ruins are ample evidence that the amphitheater was the most magnificent architectural achievement of the Romans. It was begun about 72 A.D. by Emperor Vespasian and completed and dedicated with elaborate ceremonies in 79 or 80 by his son and successor Titus, much of the labor having been done by Jewish prisoners taken after the fall of Jerusalem. Its purpose was to provide an adequate permanent place for gladiatorial contests, wild-beast combats, athletic exhibitions and the other amusements that went to make a "Roman holiday." The arena floor, which was 281 feet long and 177 feet wide, was so constructed that it could be flooded and employed for nautical displays. More than 5,000 wild beasts were slain in the Colosseum the day it was dedicated, and Martial wrote his thirty-three epigrams known as *Liber Spectaculorum* for the occasion. Among the Romans it was known not as the Colosseum but as the Flavian Amphitheater, Flavius being the family name of Vespasian and Titus, the two emperors under whom it was built. *Colosseum* (often incorrectly spelled *coliseum* and *collosseum*) apparently was not applied to it until after the eighth century, when the Venerable Bede referred to it as *colyseus* or *colosseus*, from which *colosseum* was formed. The following lines from Byron's *Childe Harold's Pilgrimage* are a rough translation of a passage in Bede's *Vaticinium*:

While stands the Coliseum, Rome shall stand;
When falls the Coliseum, Rome shall fall;
And when Rome falls—the world.

The ancients called any gigantic statue a *colossus*—the Colossus of Rhodes, for instance—and Bede probably desired merely to emphasize the great size and grandeur of this architectural wonder of the Eternal City. Like many other buildings, ancient and modern, it may have received its popular name from an earlier building, monument or other structure on the same site. Some authorities suppose the Colosseum, which was built on the site of the gardens around the Golden House of Nero in the center of Rome, derived its popular name from the 117-foot gilded bronze colossus of Nero that stood near by, although only the base of this statue remained when the name became common. The ground plan of the whole Colosseum was an ellipse about 615 feet long and 510 feet wide. Around this was a 160-foot solid wall of large blocks of travertine constructed in four stories, the first being arcaded in the Tuscan-Doric style, the second in the Ionic, the third in the Corinthian and the fourth, which was originally of wood

pierced with numerous openings, being decorated with Corinthian pilasters. The gallery of wood on top was replaced with stone after a fire in the third century. The inside of the wall was composed of porous rock and brick partly faced with concrete. There was no general roof but parts of the structure were provided with awnings. The seats consisted of tiers of marble for the common people and special booths and boxes for the privileged classes. Some eighty openings in the ground story led to a network of corridors, aisles, stairways and passageways through the subterranean interior. Gladiatorial combats were abolished about 405 A.D. by Honorius, but beast baitings and similar brutal exhibitions were held in the Colosseum for about a century longer. The dismantling of the structure began in the sixth century when Theodoric, king of the Ostrogoths, used some of the materials for other buildings. After that the Colosseum became a sort of quarry. Pope Paul II obtained stone from that source for the palace of St. Mark in the fifteenth century. Pope Benedict XIV (pope from 1740 to 1758) saved the ruins from further destruction by consecrating them to the memory of the early Christians who had been martyred there by being thrown defenseless among savage beasts. So famous is the Colosseum that the term is applied not only to other Roman structures of the same character but also to modern amusement places. There are still some remains of the Amphitheatrum Castrense, a smaller but nonetheless elaborate amphitheater near the Lateran in Rome.

What does *Pittsburgh plus* mean?

Pittsburgh plus is applied to a system, formerly practiced by the steel industry, under which the price of steel products at any point in the United States was the Pittsburgh price plus the freight from Pittsburgh to the point where the products were purchased. In other words, plants outside Pittsburgh charged the Pittsburgh base price plus an amount equivalent to what the railroad freight charge on the products would be from Pittsburgh to the consumer if such products were actually shipped from Pittsburgh. Suppose a man living in Des Moines were to buy a ton of steel from a plant in Gary and that the price of such steel at Pittsburgh were \$30. Under the Pittsburgh plus plan the ton of steel would cost the customer \$30 plus what the freight from Pittsburgh to Des Moines would be, notwithstanding the fact that the steel did not come from Pittsburgh. The actual freight from Gary to Des Moines would be paid by the steel company. In 1924 the Federal Trade Commission ordered the United States

Steel Corporation and its subsidiary companies to discontinue the Pittsburgh plus system on the ground that it was an unfair method of competition and in violation of several federal statutes.

How did Hannibal use vinegar in crossing the Alps?

One of the favorite stories of ancient history is that Hannibal, the Carthaginian general who invaded Italy from the north in 218 B.C., cut a road through the Alps by pouring vinegar on the rocks. Although there is at least one earlier allusion to the incident, the first detailed account of the use of vinegar in the Alps by Hannibal is found in the history of Rome by Livy, who lived from 59 B.C. to 17 A.D., about 200 years after the alleged event. Regarding Hannibal's famous march, Livy wrote:

At last, when men and beasts had been worn out to no avail, they encamped upon the ridge, after having, with the utmost difficulty, cleared enough ground even for the purpose, so much snow were they obliged to dig out and remove. The soldiers were then set to work to construct a road across the cliff—their only possible way. Since they had to cut through the rock, they felled some huge trees that grew near at hand, and lopping off their branches, made an enormous pile of logs. This they set on fire, as soon as the wind blew fresh enough to make it burn, and pouring vinegar over the glowing rocks, caused them to crumble. After thus heating the crag with fire, they opened a way in it with iron tools, and relieved the steepness of the slope with zigzags of an easy gradient, so that not only the baggage animals but even the elephants could be led down.

There is really nothing improbable in the story as told by Livy, although it has provoked considerable ridicule and is generally pronounced a fable. Most writers who ridicule it erroneously assume that the vinegar was used to dissolve the rocks or to melt the snow and make the march less slippery. Livy's account shows clearly that the rocks were cracked by the combined action of the heat and vinegar. The same disintegrating effect could have been produced by heating the stones and pouring water or any other liquid on them. Cleavage would be caused by the expansion of the liquid when it came in contact with the heat in the fissures of the rock. That strong vinegar and other weak acids will slowly dissolve limestone and other calcium carbonates is a well known fact, but it is not likely that Hannibal used vinegar on a large scale for that purpose. "Where did the vinegar come from?" is a common question in this connection. Sir Thomas Browne in *Vulgar Errors* (1646) wrote: "That Hannibal ate or brake through the Alps with vinegar may be too grossly taken, and the author

of his life annexed unto Plutarch, affirmeth only he used this artifice upon the tops of some of the highest mountains. For as it is vulgarly understood, that he cut a passage for his army through those mighty mountains, it may seem incredible, not only in the greatness of the effect, but the quantity of the efficient, and such as behold them may think an ocean of vinegar too little for that effect." Chistopher Wren, Bishop of Windsor and father of the great architect of the same name, commented on this passage as follows: "There needed not more than some few hogsheads of vinegar, for having hewed downe the woods of firr growing there, and with the huge piles thereof calcined the tops of some cliffes which stood in his waye; a small quantity of vinegar poured on the fired glowing rocks would make them cleave in sunder, as is manifest in calcined flints, which being often burned, and as often quentcht in vinegar, will in fine turne into an impalpable powder, as is truly experimented, and is dayly manifested in the lime kilnes." Undoubtedly a very small quantity of vinegar was required, because Livy makes it plain that the liquid was used in cutting a passage through the rocks for the construction of a road across a single cliff. The availability of a supply of vinegar for one reason or another, or the then common belief that vinegar made stones friable, probably prompted the Carthaginians to use it rather than water.

Why are certain snakes called boas?

Boa, now the name of a large family of nonvenomous snakes that kill their prey by constriction, was originally applied to a species of water snake in Roman times. Pliny the Elder, in his notoriously inaccurate *Natural History of the World*, refers to the boa in his chapter on serpents of remarkable size. He says: "The serpents which in Italy are known by the name of boa, . . . grow to such a vast size that a child was found entire in the stomach of one of them, which was killed on the Vaticanian Hill during the reign of the Emperor Claudius. These are nourished, in the first instance, with the milk of the cow, and from this they take their name." In other words, according to Pliny, *boa* is from Latin *bos*, "ox" or "cow." If the snake referred to by him existed at all it was probably a giant boa or python that had been imported for show purposes and had escaped. Apparently he confused his snakes, for there is no authentic record of such snakes ever having been native to Italy and it is known that a species of water snake was called *boa* by the Romans. The belief that any species of snake sucks cows has long since been discredited. Some modern writers are willing to admit that *boa* may be from *bos*

but prefer to believe that the name was an allusion to the great size of the reptiles, which may have been regarded as being "as big as an ox." One etymologist suggested that *boa* may be derived from *Bo!*, the natural exclamation used to surprise or frighten.

What is the longest word in the English language?

Antidisestablishmentarianism (twenty-eight letters) is the longest regularly formed English word found in any dictionary so far published. According to the *Standard Dictionary*, it means "a doctrine of opposition to disestablishment; said specifically of a state church." The term was coined during the agitation preceding passage in 1869 of Prime Minister William E. Gladstone's bill disestablishing the Church of Ireland. Gladstone himself used the word in a speech in the House of Commons. In a speech at the Duke of Wellington's Riding School on July 27, 1878, Disraeli characterized Gladstone as follows: "A sophisticated rhetorician, inebriated with the exuberance of his own verbosity, and gifted with an egotistical imagination that can at all times command an interminable and inconsistent series of arguments to malign an opponent and to glorify himself." *Anthropomorphologically* (twenty-three letters) and *disproportionableness* (twenty-one letters) occur in unabridged dictionaries as standard English words. Another exceptionally long word found in many English dictionaries is *honorificabilitudinitatibus* (twenty-seven letters), which is the ablative of medieval Latin *honorificabilitudinitas*, "honorable-ness." It dates back at least to 1548 and became the stock example of the longest word in Latin. Elizabethan writers often used it to ridicule the use of long and meaningless words. It was never intended to be taken seriously. Shakespeare employed it in *Love's Labour Lost* to satirize pedantic nonsense and bombastic language. Costard, a clown in the play, says: "I marvel that master hath not eaten thee for a word; for thou art not so long by the head as *honorificabilitudinitatibus*." John Taylor (1580-1653), the Water Poet, used the word with an additional syllable, *honorificabilitudinitatibus*, giving it twenty-nine letters. The Oxford dictionary records a twenty-nine letter humorous or nonsense word, *floccinaucinihilipilification*, which is defined as "the action or habit of estimating as worthless." It was formed by combining the Latin synonyms *floci*, *nauci*, *nihili* and *pili*, and adding the suffix *fication*. The Latin words, which signify "at little" or "at nothing," are enumerated in the Latin grammar used at Eton College. The earliest use of this "jocular" term, which contains nine *i*'s, is dated 1741. Later it was used by William Shenstone,

Robert Southey, Sir Walter Scott and other eminent writers. A number of English writers have coined long nonce words that have never found their way into a dictionary. Urquhart and Motteux's English translation of Rabelais contains many outlandish words of this kind. Of course, there are all sorts of exceptionally long names of places, persons, diseases, drugs, chemical compounds, etc. Often such names are not real words but merely Greek, Latin or other foreign words strung together. Long, ponderous and pompous words are called *sesquipedalian*, literally "a foot and a half," from Latin *sesqui*, "one half more," and *pe (dis)*, "foot." The genius of the English language, unlike Welsh, German, ancient Greek and some other languages, does not lend itself to long words. Persons who use sesquipedalian words seriously are generally laughed out of court.

What is meant by *dry cleaning*?

Dry cleaning is a translation of French *nettoyage à sec* and means cleansing without water. It is the name of a process of cleaning garments of fabric, fur or leather by means of naphtha, benzol, gasoline or other volatile petroleum products. The process is also known as French cleaning because its essential features were first developed in France about the middle of the nineteenth century. *Chemical cleaning* is another popular but misleading name for the same process. As a rule garments made of textile fiber, fur or leather are altered in size and shape when washed in water, but immersion in naphtha, benzol or gasoline causes no thickening, stretching, contracting or weakening of the material. An elaborately trimmed gown immersed in a dry-cleaning solvent retains its shape, size, ruffles, pleats, etc., but the same gown washed in water would become a shapeless mass. Sometimes, however, after certain garments are dry-cleaned they are water-washed to remove substances soluble only in water. In the early stages of the dry-cleaning industry the solvent consisted of camphine or oil of turpentine distilled for use in lamps. Now the most usual solvents are the volatile products of petroleum because they are chemically inert and harmless to fabrics. The term *dry cleaning* puzzles many people. They cannot understand how a process involving the immersion of garments in a *liquid* can in any sense be termed *dry*. As a matter of fact the garments immersed in such a solvent are not *wetted* in the ordinary acceptance of the term and the solvent is free from moisture in the same sense that *wet paint* may be. In the typical dry-cleaning process the clothing is immersed completely and washed thoroughly in gasoline, benzol or naphtha and then rinsed

in a clean bath of the same solvent, which does not act chemically on the fabric itself but removes grease and fatty substances by dissolving them. Soil, dirt, dust and grit in the fabric are removed mechanically by the motion of the liquid. A spinning centrifugal bowl separates the garment from the liquid and removes all the solvent except that which has been absorbed by the fabric. Before being pressed the garment is dried in a drying tumbler, where it is freshened by live steam and aerated by a current of hot air. The dry-cleaning process not only cleans and freshens the garment but also frees it from infectious disease germs and protects it temporarily from moths.

How did *gone coon* originate?

A person past recovery or in a hopeless difficulty is said to be a gone coon. Apparently the phrase originated with a story told of Colonel Martin Scott, who was renowned as a crack shot with the rifle. The earliest record of *gone coon* occurs in *Diary in America* by Captain Frederick Marryat, an English novelist and naval officer, who traveled in America in 1837 and 1838 and published his book in 1839. His chapter entitled *Language* contains the following:

I'm a gone 'coon implies "I am distressed—or ruined—or lost." I once asked the origin of this expression and was very gravely told as follows: "There is a Captain Martin Scott in the United States Army who is a remarkable shot with a rifle. He was raised, I believe, in Vermont. His fame was so considerable through the State, that even the animals were aware of it. He went out one morning with his rifle, and spying a raccoon upon the upper branches of a high tree, brought his gun up to his shoulder; when the raccoon perceiving it, raised his paw for a parley. 'I beg your pardon, mister,' said the raccoon, very politely; 'but may I ask you if your name is *Scott*?' 'Yes,' replied the captain. '*Martin Scott*?' continued the raccoon. 'Yes, Martin Scott,' replied the captain. '*Captain Martin Scott*?' still continued the animal. 'Yes,' replied the captain, '*Captain Martin Scott*.' 'Oh! then,' says the animal, 'I may just as well come down, for I'm a gone 'coon.'"

This story was also told of David Crockett, another famous rifle shot. Whether the story was told first of Scott or Crockett is not known. Captain Scott was killed by a musket ball while leading a charge at the battle of Molino del Rey during the Mexican War. General Winfield Scott is sometimes erroneously made the hero of the famous coon story. J. C. Hotten in his *Slang Dictionary* (1870) gives an amusing story accounting for the origin of *gone coon*. During the Revolutionary War, declared the English writer, an American spy dressed

in a raccoon skin hid himself in a tree. A British soldier mistook him for a real coon and leveled his musket at him, whereupon the frightened Continental exclaimed: "Don't shoot, I'll come down of myself, I know I am a *gone coon*." The phrase may date back to the Revolution, but this sounds very much like a distorted version of the story originally told of Captain Scott by Captain Marryat.

How heavy was the largest silver nugget ever found?

Under natural conditions silver, unlike gold, seldom occurs in nugget form. That is why we do not hear of placer silver mines and of prospectors panning for silver. This metal is generally found in ores in combination with other metals and often it is a by-product of gold, copper and lead mining operations. In fact there are very few silver mines in the world. The largest mass of comparatively pure silver ever discovered in a natural state is believed to have been found by an Indian in Sonora, Mexico, when that region was still a Spanish possession. The lump weighed 2,750 pounds troy weight. Because of a dispute over its ownership the entire mass was appropriated by the Spanish government. The largest lump of silver ever mined in the United States was taken from the Smuggler Mine, Aspen, Colorado, in 1894. It weighed 1,840 pounds. A lump weighing 1,640 pounds was found in the Cobalt district in Canada. Other notable "silver nuggets" have been reported from Peru, Norway and Honduras, weighing respectively 800, 500 and 200 pounds. North America produces more silver than any other continent and the United States and Mexico are the leading silver-producing countries. Idaho leads all the states in silver production, and the Sunshine Mine several miles east of Kellogg in that state is the largest silver mine in the world. A silver mine in Mexico, known as Real del Monte, has been operated since the days of Montezuma and still produces 10 percent of the world's silver supply.

Who coined *almighty dollar*?

Almighty dollar, denoting money as the alleged object of worship in America, is attributed to Washington Irving, who used the term twice in *The Creole Village*, first published in 1836. Referring to the Creole villages along the Mississippi River in Louisiana, Irving wrote: "In a word, the almighty dollar, that great object of universal devotion throughout our land, seems to have no genuine devotees in these peculiar villages." Further on in the same sketch he wrote: "As we swept away from the shore, I cast back a wistful eye upon

the moss-grown roofs and ancient elms of the village, and prayed that the inhabitants might long retain their happy ignorance, their absence of all enterprise and improvement, their respect for the fiddle and their contempt for the almighty dollar." *The Creole Village* was republished by Irving in 1855 in *Wolfert's Roost*. An asterisk following *almighty dollar* in that volume directs the reader to the following footnote by Irving himself: "This phrase, used for the first time in this sketch, has since passed into current circulation, and by some has been questioned as savoring of irreverence. The author, therefore, owes it to his orthodoxy to declare that no irreverence was intended even to the dollar itself; which he is aware is daily becoming more and more an object of worship." Irving's authorship of the phrase has been questioned on the ground that it appeared in the Philadelphia *Public Ledger* under date of December 2, 1836. That paper, in an article criticizing Governor Isaac Hill of New Hampshire, said: "The Almighty Dollar is the only object of worship." The *Public Ledger*, however, inclosed the phrase in quotation marks. It was formerly supposed that *The Creole Village* was first published in England in the 1837 number of an annual called *Magnolia* but the fact appears to be that it was first published in the New York *Knickerbocker Magazine* dated November 12, 1836. Although Irving undoubtedly coined *almighty dollar*, Ben Jonson had used *almighty* in a similar connection more than two centuries earlier. In *Epistle to Elizabeth, the Countess of Rutland*, Jonson wrote:

Whilst that, for which all virtue now is sold,
And almost ev'ry vice, almighty gold. . . .

How high do birds fly?

The South American condor probably ascends to greater altitudes than any other bird. It is believed that it sometimes goes up as high as four miles. Owing to the rarity of the atmosphere most small birds when taken up in aircraft become insensible at much lower altitudes than that. Twenty miles up there is only $1/100$ as much air as there is at sea level, and aviators without special protection begin to suffer physically before reaching a height of 20,000 feet. Regulations generally require that fliers begin to use oxygen artificially when they attain an altitude of 15,000 feet. It is probable that birds ascend to greater altitudes over high mountains than elsewhere. Although aviators do not encounter birds at greater altitudes than 15,000 feet, mountain climbers on Mount Everest reported seeing lammergeiers,

curlews and choughs flying at 20,000 feet, which is nearly four miles. Migrating birds generally fly under the lowest clouds and it is unusual for them to migrate at altitudes greater than three or four thousand feet. The higher they ascend the colder it is and the more difficult for them to fly. Geese, cranes, rooks and lapwings are among the highest-flying birds, but even they fly comparatively low when the weather is cloudy or otherwise unfavorable. Many of the reports of birds flying at great heights come from astronomers who see flocks of migratory birds passing between the telescope and the heavenly body being observed. Such testimony should be accepted with caution. A British astronomer reported to London *Nature* that he photographed wild geese flying between his telescope and the sun at an altitude that he estimated at nearly five miles. The Egyptian goose, a handsomely marked species of wild goose native to the Near East, is reputed to ascend to heights of 35,000 feet, and there are frequent reports of cranes reaching an even greater altitude.

Is the Pacific Ocean higher than the Atlantic?

The exact level of the open seas is not the same all over the world. It is affected locally by the configuration of coasts, the gravitational pull of mountains and by current, tidal and wind influences. The variations, however, generally are not more than a few feet. It is believed that the level of the Pacific Ocean at the Panama Canal is slightly higher than that of the Atlantic at the other end of the canal. Spirit-leveling across Panama indicates a real difference, although the exact difference has not been determined. In 1908 the tide gages of the two ends of the canal were connected by a line of precise leveling, and by computing from continuous records of the tide for ten years in both places it was found that the average mean sea level at the Pacific entrance was 0.684 of a foot or about seven inches higher than the average mean sea level at the Atlantic entrance. The levels of the two oceans were about the same in February, but throughout the rest of the year the level of the Pacific was higher than that of the Atlantic, the difference amounting to nearly a foot in October. This difference may be due in part to ocean currents that tend to pile up the water in the Gulf of Panama while they lower it in the Mosquito Gulf. But there may be a real difference in the mean sea level of the two oceans. A report of the United States Coast and Geodetic Survey contained a summary of all precise determinations of mean sea level along the American coasts in relation to the lines of land levels that have been carried across the

continent. The Pacific Ocean was found to average about two feet higher than the Atlantic at the same latitude. Difference in sea level should not be confused with difference in tide fluctuations. On the Pacific side of Panama the tide has a fluctuation of more than twenty feet, while on the Atlantic side there is a fluctuation of only about two feet, a difference that may be due to winds, currents and the attraction of neighboring land masses. There appears to be no foundation for the popular notion that the climate of North and South America was appreciably affected by the digging of the Panama Canal.

When did a Jew first sit in the British Parliament?

No adherent of the Jewish faith was a legal member of the British Parliament until 1858, when Baron Lionel de Rothschild was admitted to full-fledged membership in the House of Commons. Benjamin Disraeli, who took his seat in the House of Commons in 1837, was born in the Jewish faith, but he had been baptized a Christian at the age of thirteen and was not regarded as a Jew when he entered Parliament. All Jews, about 16,000, were expelled from England in 1290, during the reign of Edward I, and most of them found sanctuary in the Low Countries and in Germany. Although Jews gradually returned to England in the course of centuries, they were barred from all political offices of importance by the form of the oath. The difficulty lay in the fact that the British sovereign was head of the established church. Baron Lionel de Rothschild was elected a member of the House of Commons for the City of London in 1847, and again in 1849 and 1852, but he was unable to take his seat because no orthodox Jew could subscribe to the oath and swear "on the true faith of a Christian." Meanwhile another Jew, Sir David Salamons, had been elected to the Commons for Greenwich, and he insisted on taking his seat in 1851 without subscribing to the oath, going so far as to refuse to withdraw from the chamber when commanded to do so by the Speaker. His bold course caused so much excitement that a motion to adjourn was made to quiet the uproar, and Sir David added to his parliamentary offense by voting on the motion. Sir John Russell, the prime minister, moved that the offender be ordered to withdraw, and that motion carried, although Sir David won the sympathy of the House by making a dignified and forceful address in his own defense. A court later held that he had no legal right to vote in the House without having taken the prescribed oath and fined him £500 for each vote he had cast. Several times the House of Commons passed a proposal to remove all civil disabilities for Jews, but each time it

was rejected by the House of Lords. The agitation continued and in 1858 a compromise was reached whereby either House could admit Jews by resolution, allowing them to omit the objectionable words in the adjuration. Although Baron de Rothschild had been denied his seat, he was treated as a member of the House and was even permitted to serve on the committee that effected the compromise with the Lords. On July 26, 1858, he took the oath and became a full-fledged member, substituting "so help me, Jehovah" for "on the true faith of a Christian" in the oath. He continued to represent the City of London in Parliament until 1874. Sir George Jessel, who entered the House of Commons as a Liberal from Dover in 1868, was appointed solicitor general by Prime Minister Gladstone in 1871 and was the first Jew to serve as a member of the British privy council and the cabinet.

Does cutting make the hair grow faster?

Although experiments have given conflicting results and there is some difference of opinion on the subject, the majority of investigators have concluded that cutting does not make the hair grow faster. The hair of normal healthy persons has a definite rate of growth that seems to remain fairly constant whether it is cut often or not at all. Hairs on the human body do not grow from the ends, as many people seem to think, but only from the roots, and they are as lifeless as the finger and toe nails. The rate of growth of hair depends upon the age and physical condition of the individual. It is estimated that the average rate of growth of hair is about half an inch a month. The average longevity of a hair is probably five or six years. Each hair "dies" and comes out when the follicle around its base in the skin takes a "rest." As a rule the follicle begins to grow another hair to take its place. Because of this periodical shedding of individual hairs the hair of the average person does not grow indefinitely in length even if it is never cut. Tests made at the Mellon Institute indicate that hair, whether on the head, face or elsewhere on the body, does not grow faster or thicker no matter how many times it is cut, shaved or singed. One investigator, however, reported that his experiments showed that shaving makes the beard grow considerably faster. This was explained by the fact that shaving tends to irritate the skin somewhat and causes an increased flow of blood to the area shaved. Consequently more nourishment is carried to the hair follicles and this might cause the beard to grow stiffer and heavier, and perhaps faster, although the evidence that the speed

of growth is actually accelerated has not been confirmed by other investigators. In other words, according to this theory, it is not the cutting of the beard that makes it grow stiffer and heavier, and perhaps faster, but the irritation of the skin during the process of shaving. Irritation or stimulation in other ways would have the same effect. But a college professor of biology reported to the author in 1934 that he had kept one side of his chest shaved for more than a year and that measurements of the hairs with a micrometer showed that the shaving did not increase the thickness or coarseness of the hair. Shaved beards and cut hair may seem to be coarser and thicker because shaving and cutting blunt the naturally tapered ends of the individual hairs.

Which is correct, *milk cow* or *milch cow*?

Milch (pronounced to rhyme with *filch*) is an old adjectival form of *milk* and means "giving milk," "in milk" or "kept for milk." It is applied to domestic animals and survives chiefly in *milch cow*. This distinction between *milch* as an adjective and *milk* as a noun is a heritage from Anglo-Saxon in which the adjectival and noun endings of a word often differed. *Milch* as a verb was also once used but is now obsolete. According to the King James Version of the Bible, Jacob, when choosing a present for Esau, took "thirty *milch camels* with their colts" (Genesis 32:15), and the priests and diviners told the Philistines to "take two *milch kine*" to draw the ark of the Covenant (I Samuel 6:7). Under date of July 30, 1768, George Washington, referring to an agreement with his carpenter, noted in his diary: "I am also to allow him to keep two *Milch Cows*." *Milch cow* still prevails in British but is obsolescent in American usage. Although for many years farmers and farm writers in the United States have been using *milk cow*, the dictionaries have been reluctant to accept it as a proper substitute for *milch cow*. There has been a difference of usage even in the government departments. In 1925 A. B. Nystrom, Department of Agriculture husbandman, wrote: "Concerning the use of the words *milk* and *milch*, I wish to state that so far as I am able to ascertain the word *milk* is used in place of *milch* in all Department publications. This change dates back about six or seven years; and while it has not been officially adopted, so far as can be determined, it is now generally understood that *milk* is to be used in preference to the adjective *milch*." In 1939 it was announced that the Department of Agriculture had made this policy official. But the Government Printing Office did not give up *milch cow* without a

struggle. In 1926 that agency wrote: "This office has not adopted *milk* to the exclusion of *milch* where the form is *milch cow*, and as a matter of fact we do not know of any authority for the use of *milk cow*. *Milch* is used in Government Printing Office publications unless specific instructions are given to the contrary." Public opinion and common usage, however, insisted on *milk cow* and would have nothing to do with *milch cow*. In 1939 Jo Coffin, assistant to the public printer, wrote to the author: "The practice of the Government Printing Office is to use the term *milk cow* at all times, as will be noted on page 44 of the 1939 edition of our Style Manual." Despite this change of usage by the Government Printing Office, as late as 1941 the United States Department of Commerce announced that "A breed of milch cows three feet high has been developed in the Azores Islands."

How are the sizes of men's hats determined?

The number used to designate the size of a man's hat represents the average of the length and width of the crown in inches. One can roughly compute the size of any hat without recourse to a regular size ring by measuring the length and width of the crown, adding these two figures and dividing the result by two. The numbers do not always correspond exactly to the sizes because hat blocks vary considerably and hats often stretch with wear. Theoretically, however, the number denoting the size of a hat may be regarded as the diameter of a circle equal to the oval of the crown. Hat sizes have not been standardized throughout the world and the American-British, French and Spanish systems of numbering differ considerably. The one in most general use is the American-British system, in which the numbers range from $6\frac{1}{4}$ to $7\frac{1}{2}$. Even this system as used in the United States and the United Kingdom is not exactly the same. English hat sizes differ from American by one size, an English hat numbered 7 being actually as large as an American one numbered $7\frac{1}{8}$, because the British use felt cover on their hat blocks that makes a difference of one size or an eighth of an inch. Hat manufacturers report that the great majority of American men wear hats ranging in size from $6\frac{7}{8}$ to $7\frac{1}{4}$, 7 representing the average size, although 25 percent of all men's hats sold are size $6\frac{7}{8}$. Among the presidents of the United States, Garfield wore the largest hat— $7\frac{3}{4}$. Grant, Taft and Franklin D. Roosevelt wore oversized hats— $7\frac{5}{8}$. Cleveland and Benjamin Harrison wore a $7\frac{1}{2}$, the largest standard size, while Theodore Roosevelt and Harding wore $7\frac{3}{8}$ hats. Lincoln wore a

7 $\frac{1}{8}$, and it is an interesting fact that no president since his time with the single exception of Coolidge has worn a hat that small. The hats of all the presidents from Grant to Truman ranged in size from 7 $\frac{3}{8}$ to 7 $\frac{3}{4}$.

What is the Christ of the Andes?

A colossal bronze statue of Christ in the Uspallata Pass on the Chile-Argentina border is popularly known as the Christ of the Andes. In 1901 Argentina and Chile were on the verge of war over the interpretation of the boundary treaty of 1881, which involved about 80,000 square miles of territory. Better counsel prevailed, the dispute was submitted to arbitration and in 1902 King Edward VII of England signed the award. Both countries ratified the award and the next year bound themselves by treaty to reduce their armaments and to submit to arbitration all disputes arising between them. Bishop Venavente of the Diocese of San Juan suggested that a statue be erected to commemorate the event and to remind the two peoples of the solemn pledges. The suggestion met with approval and under the leadership of Señora Angela de Oliveira Cesar de Costa the women of Buenos Aires raised the necessary funds by popular subscription. A model made by a young Argentine sculptor named Mateo Alonso was accepted and the statue was cast in the Buenos Aires arsenal from old Spanish cannon. The statue was transported into the high Andes at the expense of the Argentine Government and erected in the Uspallata Pass at an altitude of 13,780 feet above sea level. The upraised left hand of the bronze figure of Christ, twenty-six feet in height, grasps a cross extending five feet above the head; the right hand is raised as if blessing the world. The figure, which faces the northwest as if looking over the international boundary, stands on a granite hemisphere five feet high and fourteen tons in weight on which the map of the New World is sketched in bronze. This hemisphere in turn rests on a twenty-two-foot base of stone and concrete. When the statue was dedicated March 13, 1904, in the presence of dignitaries and soldiers from both nations, the chief address was delivered by the bishop of San Carlos de Ancud, who said among other things: "And when future generations, carried in the arms of steam, mount to this spot through these defiles, they will find here no testament such as that of the heroic Spartans at Thermopylae, written in blood upon the bare stones—'Here we gave up our lives to defend our country's laws.' Rather will they come to this summit and in the bronze of the glorious monument will see, graven in letters

of fire, a sublime inscription—'Sooner shall these mountains crumble into dust than Argentines and Chileans break the peace that they have sworn to maintain at the feet of Christ the Redeemer.' " More than thirty years later the Rotary Clubs of Chile and Argentina had the bishop's "sublime inscription" engraved on the base of the monument.

What is the ceremony connected with crossing the line?

The custom of performing an elaborate but burlesque ceremony on shipboard when the equator is crossed dates back many centuries and probably is a survival of a religious exercise. Ancient Greek sailors often stopped their vessels at certain points, particularly off capes, and offered sacrifices to appease the gods in control of the seas. By the time of the Middle Ages the ceremony consisted of a visit from Neptune, although it was performed upon entering the tropics or crossing the Arctic Circle. There is no allusion to the crossing-the-line ceremony in connection with the Portuguese and Spanish voyages in the South Atlantic in the latter part of the fifteenth century, but it is described in 1682 as ancient then. At one time nearly every ship of importance, whether merchant vessel, man-of-war or whaler, compelled the members of the crew and passengers who had never before crossed the line to pay tribute to King Neptune upon reaching the equator, and the custom, while not so common as it once was, is still widely observed. The rules are most rigidly followed and the ceremony is the most elaborate on board navy vessels. Naturally the details of the performance vary considerably, but its essential features follow the same pattern. The day before the ship is due to cross the line a member of the crew representing Davy Jones, as the messenger of Neptune, hails the captain, salutes him in the name of the sea lord and requests him to muster all novices—polliwogs—on deck the next day for inspection. At the appointed time the ship is hove to and Neptune and his beloved wife Amphitrite, goddess of the sea, accompanied by their suite in outlandish costumes, appear upon the scene, presumably from their home in the deep. Neptune himself carries a trident with a dolphin between the prongs, and in his suite is a barber with a huge wooden or iron razor and a tube to be used as a shaving mug. Having been provided with a list of the novices on board, King Neptune calls out their names, one at a time, and each candidate in turn presents himself for initiation into the order of shellbacks, as those who have crossed the line are known. First the candidate is charged with a long list of out-

rageous crimes against the laws and traditions of the sea and is pronounced guilty without being given a chance to defend himself. Then, after having his face and hair daubed with tar or paint, the victim is blindfolded and seated on a platform laid over a sheeppen lined with canvas and filled with water. The barber covers him with lather of soapsuds or flour paste and goes through the motions of shaving him, whereupon the candidate is plunged backward into the water and pronounced a shellback. Sometimes the ceremony opens with the old practical joke known as "ambassador." A tub full of water is placed between two stools and the whole is covered with a green cloth. King Neptune and Queen Amphitrite sit on the stools to keep the cloth tight. When the "ambassador" is presented to their majesties they offer him the seat of honor between them. Of course, when he sits down they arise and he falls into the water. The ceremony often degenerates into a veritable saturnalia of practical jokes, sports, merrymaking, tomfoolery and humorous indignities. Formerly the ordeal was made worse by actually lowering the novices into the sea with a rope. Sometimes the initiation is concluded by presenting the new shellbacks with suitably engraved diplomas. Needless to say, ruined clothing and stiff joints are frequently the result of all this horseplay, but the shellbacks on board enjoy the show immensely. It was probably encouraged by officers in former days to relieve the tedium of long voyages in southern seas. Officers crossing the line for the first time are let off with a money fine, used ostensibly to "maintain a church" but actually to buy refreshments.

How did the small bow inside men's hats originate?

The little bow of string or ribbon that holds together the ends of the sweatband in the back of men's hats is believed by some to have been originally more than a mere useless ornament as at present. It is supposed to be a survival of the time when hats were adjustable to the size of the head. Formerly hats were made of a single piece of material and in only a few sizes. They were made by taking a strip of leather, boring a hole in each end of it and drawing the two ends together with a piece of string. A man would buy a hat slightly larger than his head and then adjust the band to his exact size with the "drawstring." The large bow on the left side of the outer hat-band may have had a similar origin. Although it has been said that such bows are traceable to the medieval custom of a knight's wearing a favorite lady's scarf wound around his helmet before entering a tournament or going into battle, it is probably a relic of the more

practical custom of wearing a string around the crown of the hat to alter it to fit the head of the individual. Even at the present time many people in the country wear straw hats with a shoestring or other cord around the crown so the hats can be made to fit simply by tightening or loosening the string. But the general theory that all such ornaments of dress can be traced to a utilitarian purpose is far from satisfactory. Little regarding the origin of an object can be deduced from its past or present use. Ornamental designs in costume seldom originate among the common people. They are more likely to be irrational styles created by the upper classes for decorative rather than practical purposes. Styles in dress are seldom devised for their usefulness. The ancient Egyptians may have worn a band around the head to keep the hair in place and modern hatbands may be a relic of that practice, but many primitive people today wear similar bands around the head solely for ornament.

Why are two-dollar bills considered unlucky?

That a two-dollar bill will bring bad luck to the holder and that the curse can be removed only by tearing off a corner is a widespread superstition in the United States, especially among gamblers. Such bills were first issued as legal-tender notes or greenbacks during the Civil War in 1862. The most common explanation of the superstition regarding them is that two-dollar bills, being relatively scarce, are often mistaken for one-dollar bills and that originally a corner was torn off to prevent such mistakes in making change. Another explanation is that two-dollar bills became unpopular because counterfeiters sometimes "raise" them to make bogus twenty-dollar bills, or "split" them to make two counterfeit twenty-dollar bills out of one genuine twenty and one two. Still another explanation is that two-dollar bills acquired their unpopularity because two dollars used to be the price paid for a vote by unscrupulous politicians and it was paid with a two-dollar bill. After the presidential campaign of 1880, in which an unusual amount of money was spent to carry certain doubtful states for the Republicans, it was charged that Indiana was plastered with two-dollar bills. Possession of such a bill after election was facetiously said to be *prima-facie* evidence that one had sold his vote. Nearly all two-dollar bills returned to the Treasury have one or more corners torn off. The corners are clipped off so neatly in many cases that some people have the impression that the government issues them in that condition. All mutilated paper currency is destroyed and it costs the government about a cent apiece to replace

these bills. Since two-dollar bills are not necessary in making change many people wonder why they are issued at all in view of the prevalent superstition. They were originally intended to make quick change at pay-roll windows when silver dollars were still common and many did not want too much "heavy money." The chief demand for two-dollar bills now is from race-horse betters at tracks where the unit bet is two dollars under the pari-mutuel system. In 1925 the government tried to popularize this bill by inserting one in each pay envelope given to federal employees. Several newspapers offered to aid in the campaign by giving prizes for two-dollar bills containing certain serial numbers, but the Post Office Department ruled this a lottery and a violation of the postal laws. During the depression in the early 1930's even hoarders of paper money avoided using two-dollar bills. In 1931 there were still about twenty-six million of them in circulation, but they were being returned to the Treasury faster than they could be replaced. By 1934 the number in circulation had dropped to sixteen million. No amount of educational promotion could overcome the popular prejudice against them and the government virtually abandoned issuing them for several years, but in 1940 the Treasury resumed printing them. It was the only common United States paper money not counterfeited by Nazi Germany and accordingly it was acceptable everywhere in the world during the Second World War. For a time it was the only United States paper money permitted to circulate officially in Mexico. The current two-dollar bill features a picture of Jefferson on one side and that of his estate, Monticello, on the other.

How do flies walk on ceilings?

Entomologists tell us that the foot of the housefly contains two curved lateral claws between which is a pair of membranous pads. These pads are covered below with innumerable closely set hairs that secrete a small amount of viscid liquid. The liquid enables the fly to walk upside down on a smooth surface. Some authorities doubt that the fluid secreted by the foot hairs is sticky and believe that the insect is enabled to cling to the smooth surface by capillary adhesion—the molecular attraction between the liquid and a solid body. When a fly seems to be washing itself it is not cleaning its body, as commonly supposed, but its feet. There seems to be no truth in the belief, formerly quite common, that the fly removes the air from under its feet by means of suckers through the hairs and that the atmospheric pressure holds it against the smooth surface on which

it is walking. One authority says experiments show that the adhesive power of houseflies is in no way impaired by the removal of atmospheric pressure. Insects are extremely light in proportion to their size and do not have to worry about the law of gravity so much as heavier and more solid creatures do. In 1945 E. D. Eyles, of the Kodak Research Laboratories at Harrow, England, used a high-speed motion-picture camera to determine how flies land on a ceiling. He reported that they perform a "half roll" in alighting and come to rest at a slight angle to the original direction of flight.

Is the "U.S. Chamber of Commerce" a government organization?

The Chamber of Commerce of the United States of America—popularly but improperly called the United States Chamber of Commerce—although formed at a conference called at Washington in 1912 by President Taft, is in no sense a government organization. It is a super chamber of commerce—a federation of some 1,600 local chambers of commerce, boards of trade, national trade associations and similar bodies. It publishes a monthly magazine called *The Nation's Business* and its chief functions are to co-ordinate and express the views of its member bodies, supply trade information and generally serve the commercial organizations of the whole nation as the local units serve their communities or industries. There is no federal law prohibiting the use of *United States* in the names of private companies and associations. The Chamber of Commerce of the United States of America, like the United States Steel Corporation, the United States Rubber Company and many other private concerns, merely incorporated part of the official name of the nation in its organization name. The name indicates that the organization serves the business interests of the whole country and not only those of one city, region or state. Chambers of commerce, trade organizations and associations of businessmen formed to protect and promote the commercial interests of the members originated in Europe after the disintegration of the guilds. The chamber of commerce at Marseille, France, the earliest such organization on record, grew out of a committee of merchants organized in 1599. The first American organization of this kind was the New York Chamber of Commerce, founded in 1768 and incorporated by a royal charter from King George III in 1770. A chamber of commerce was organized at Charleston, South Carolina, in 1773, and in 1839 the businessmen of Cincinnati organized the first chamber of commerce west of the Alleghenies. In Europe chambers of commerce and boards of trade often are official

organizations; in the United States they are private organizations and have no direct connection with the federal, state, or local governments. Chambers of commerce and boards of trade may represent all the business interests of a city, region or the whole country, or they may represent only one industry or a number of related industries.

What are Cleopatra's Needles?

Several Egyptian obelisks are for some unknown reason popularly called Cleopatra's Needles. There is no evidence that Cleopatra, who died in 30 B.C., ever took any particular notice of them. Before her time they seem to have been known as Pharaoh's Needles. Each of these remarkable obelisks is composed of a single piece of red granite from Syene, near the first cataract of the Nile, and is about seventy feet long. After being cut in the quarry about 1500 B.C. and floated down the Nile during an annual overflow, the obelisks were erected in front of the temple of the sun at Heliopolis near Cairo by Pharaoh Thothmes III, who dedicated them to the god Atum. The monoliths are covered with inscriptions in deep and well-polished hieroglyphics dealing with the reign of Thothmes III and that of Ramses II, who ruled two or three centuries later and who evidently added to the inscriptions. The hieroglyphics are in vertical columns and read from top to bottom. Early in the first century of the Christian Era Caesar had these stones removed to the Caesareum at Alexandria. Suetonius says that Emperor Caligula had one of them transported on a ship from Egypt to Rome, where it was placed standing upright in the Circus. Later it fell down and lay prone for centuries until about 1600 the pope had it set up in front of the Lateran. Another of the stones was removed from Egypt to Constantinople by Constantine the Great. In 1819 Mohammed Ali offered one of these monoliths, then buried in the sand at Alexandria, to the British government, but no attempt was made to remove it until 1877, when the distinguished dermatologist, Sir Erasmus Wilson, offered to pay all the expenses in having it transported to England. The monument was first incased in an iron cylinder and then the whole was enclosed in a large wooden raft. While the raft was being towed at sea a severe storm compelled those in charge of it to abandon the ancient monument in the Bay of Biscay. Later, however, it was recovered and set up on a nineteen-foot granite pedestal on the Victoria Embankment of the Thames in London. The monolith weighs 186 tons, is 68½ feet tall and measures 7 feet 5 inches across one side of the base and 7 feet 5½ inches across the other. Meanwhile Ismail Pasha, khedive of

Egypt, had tendered the companion obelisk to New York City through the Department of State. The stone was transported from Egypt in 1880 by Commander H. H. Gorringe at the expense—\$103,000—of William H. Vanderbilt and erected in Central Park the next year. It rests on four bronze crabs, copies of the originals, two of which are preserved in the Metropolitan Museum. The monolith in New York is a few inches larger at the base, weighs about fifteen tons more and is about a foot taller than the one in London. Thothmes III, who first erected the monument, is honored in the inscriptions in one column on the New York stone, while Ramses II is honored in the others. These interesting monuments of antiquity have been damaged more by the climate of New York and London during the time they have been there than they were by that of Egypt in 3,300 years.

May a French citizen enlist in the Foreign Legion?

French Foreign Legion is merely the popular name of several regiments in the French regular army that are unique in being composed largely of foreigners. Officially they are known as *Régiments étrangers*, "foreign regiments." For centuries *foreign legion* was applied to irregular volunteer corps of foreign sympathizers raised by nations at war. Although Charles VII had his Scottish guards and Louis XVI his Swiss guards, the first foreign legion in the modern sense of the term was organized in 1792 when the National Assembly of France authorized the formation of several regiments of foreign troops from which all French citizens were excluded. The present French Foreign Legion, however, was established in 1831 during the reign of Louis Philippe chiefly for service in North Africa. This corps differed from its predecessors in that Frenchmen were also admitted under certain conditions. In 1931, the hundredth anniversary of the corps, some twenty different nationalities were represented in the more than twenty thousand men comprising the five infantry and one cavalry regiments of the Foreign Legion. Germans, Russians, Czechs, French and Austrians ranked in number in that order. The privates were chiefly refugees from their native countries, young men in quest of adventure or men who wanted to forget and be forgotten. After serving three enlistments of five years each a legionnaire can claim French citizenship and a preferred status in the foreign service. Although the men are enlisted in France through regular recruiting stations, the Foreign Legion has its headquarters at Sidi-bel-Abbès in Algeria and is generally not permitted to enter

France proper. Nearly four million square miles of Africa—more than a third of the continent—is under French control and French territory in Africa is nineteen times the size of metropolitan France. In the public mind the Foreign Legion is associated particularly with exploits in the deserts of North Africa. It is sometimes called the “Death Legion” because of the reputed desperate courage of the legionnaires and because they were formerly employed in the hardest and most dangerous campaigns. Men who have served in the famous fighting unit generally report that the romance and glamour of the service are greatly exaggerated. Great Britain, notwithstanding her far-flung empire, has no military unit comparable to the French Foreign Legion. In 1919, at the time of the Moroccan War, Spain organized a Spanish Foreign Legion, but it was never very important as a fighting unit and was virtually abandoned as a separate military organization soon after the republic was established. During the Second World War the United States seriously considered organizing a “foreign legion” to be composed of United Nations citizens then in the country.

What small-town lawyer is known as “the father of kings”?

Carlo Buonaparte (1746-1785), an untitled lawyer at Ajaccio, Corsica, was the father of an emperor, three kings, a queen and two duchesses. They were Napoleon I, emperor of the French; Joseph, successively king of Naples and king of Spain; Louis, king of Holland; Jerome, king of Westphalia; Caroline, wife of Murat and consequently queen of Naples; Marianne Elisa, grandduchess of Tuscany, and Marie Pauline, duchess of Guastalla. Even now Ajaccio has only about 25,000 inhabitants. Carlo Buonaparte was descended from Italians who settled in Corsica in the sixteenth century. He received a law degree from the University of Pisa in Italy, and after the French conquered Corsica in 1768, a year before Napoleon's birth, he became royal assessor in the Ajaccio districts, the highest position he ever held. His wife, whose maiden name was Letizia Ramolino, lived to see all of their royal children dethroned. After Napoleon's fall she wrote a pathetic letter to the rulers of Europe begging for her son's release. She had been nearly blind for several years when she died at Rome in 1836. Exclusive of two who died in infancy, all the children of Carlo and Letizia Buonaparte held sovereign rank except Lucien, who probably did more than any other member of the family to make Napoleon's rise possible. Marie Pauline, considered the most beautiful woman in the Buonaparte family, and her mother shared

Napoleon's brief exile on Elba. Carlo Buonaparte, his sons Napoleon and Lucien, and his daughters Marie Pauline and Caroline all died of cancer of the stomach. Napoleon was born in Corsica of Italian extraction and didn't have a drop of French blood in his veins. Although commissioned a French officer at fifteen, he always spoke his adopted language imperfectly. In fact it is said that he spoke English almost as well as French. It was not until 1796 that he abandoned the Italian spelling of his surname, *Buonaparte*, and adopted the French spelling, *Bonaparte*. Catherine de' Medici (1519-1589), wife of Henry II of France, lived to see three of her four sons crowned king of France—Francis II, Charles IX, and Henry III.

When was the name of Constantinople changed?

Many people are under the impression that after the First World War the name of the Turkish city on the Bosphorus was officially changed from Constantinople to Istanbul. The name of this city has not been officially changed since it was captured by the Turks in 1453 and made the capital of the Ottoman Empire. From that time till now the official Turkish name has been Istanbul. An ancient town on the site was known to the Greeks as Byzantion and to the Romans as Byzantium. In 328 A.D. Constantine the Great began to enlarge Byzantium and two years later made it the seat of the Roman Empire in the East. It was then officially named New Rome and popularly *Constantinople*, "City of Constantine." The head of the Greek church still inscribes himself "Archbishop of Constantinople, New Rome." Shortly after 1453 the Turks changed the name from Constantinople to *Istanbul*, which is from Greek *eis ten polin*, "into the city," and which had been applied to one section of the city. In French *Istanbul* became *Stamboul*. Foreigners, however, for nearly 500 years continued to call the city as a whole Constantinople and restricted the French *Stamboul* to the exclusively Turkish section. After the First World War the Turks became tired of having Istanbul called Constantinople by foreigners and began to insist on the official Turkish name. At first the Turkish government requested that all persons writing to residents of the city address their letters to Istanbul. After this request had been ignored for several years the government in 1930 decreed that all letters coming into the city not addressed to Istanbul be returned. This meant that even foreign governments could not reach their diplomatic representatives in the city without using the official *Istanbul* instead of the popular *Constantinople*. Individuals and firms outside the city could not correspond with anybody in the city with-

out complying with the decree. It was not long before foreign governments, including the United States, accepted the official *Istanbul*. In 1923 the Great National Assembly of Turkey declared Ankara on the Anatolian plateau to be the capital of the new republic. Foreigners had been calling this town Angora for centuries. Again Turkey insisted on the official native name and won its point by refusing to receive in Ankara any communications addressed to Angora. The old name, however, survives in *Angora goats*, *Angora cats*, *Angora rabbits* and the names of other long-haired animals native to the Ankara region.

What causes wood to petrify?

Animal and vegetable matter that appears to turn into stone is said to *petrify*, which is derived from Latin *petra*, "rock," and *facio*, "to make." Of course, organic matter does not turn into stone. Water containing dissolved minerals, such as calcium carbonate and silicate, infiltrates through organic matter, such as wood or the carcass of an animal, and particle by particle the mineral takes the place of the organic matter. After a time the wood or animal matter seems to have turned to stone, because often the original form and structure are retained in the process of petrification. But the organic matter does no more than act as a mold while the stone is being formed from the minerals in the infiltrating water. Petrification of wood through the replacement of the woody tissues by silica occurs only after long burial under favorable conditions, and not while the wood is exposed to air. The process usually requires hundreds, if not thousands, of years, but there is some evidence that petrification may take place under certain conditions in a much shorter time. So-called petrified forests occur in Egypt, New York, Alabama, Mississippi, Arkansas, Texas, Oklahoma, Arizona, New Mexico, Colorado, Utah, California, Yellowstone National Park and elsewhere. There is a series of petrified forests in the Petrified National Monument, which now comprises over 140 square miles in Arizona and which was first set aside as a national monument in 1906. The petrified tree trunks there belong to a now extinct pinelike species that scientists say flourished in America 200 million years ago. None of these fragments of petrified trees are in the position or location that they grew in. All of them, some six feet in diameter and a hundred feet long, are lying prostrate. The accepted theory is that these trees, some of which must have been 200 feet tall, were carried down watercourses, lodged in eddies or sandbanks and eventually buried thousands of feet under sand and clay. Silica gradually replaced the wood fiber and left fragments of

petrified trunks and stumps still retaining their original shape and appearance. Later the sand and clay was washed or blown away and the petrified trees were again exposed. The brilliant colors are due to iron oxide mixed with the silica. Even traces of wood-boring insects are found in the logs. But in the Yellowstone there are petrified sequoias still standing in position as they grew. Some of them, shorn of foliage and branches, project from 20 to 40 feet above the ground. One of them is $26\frac{1}{2}$ feet in circumference and must have originally been at least 100 feet tall. In the slope of Amethyst Mountain is exposed a petrified forest 15 or 20 "stories" high. Trees of successive geological ages appear superimposed one above the other through 2,000 feet of strata. Bits of resin imprisoned in petrified trees in Alabama gave off a mild odor. Some trees in Oregon are believed to have been petrified while buried under volcanic ash. Whether hard or soft wood petrifies quicker is not known. The belief that standing fence posts sometimes petrify evidently arose from the fact that petrified wood is often used for posts. Many persons who see these posts of petrified wood mistakenly suppose that the posts petrify after being set. Slabs of limestone are used for posts in many parts of the Western states. In Kansas there is a layer of limestone so well adapted to such use that it is locally known as "fence-post limestone."

How is *Bourbon* pronounced?

The accepted English pronunciation of *Bourbon*, when applied to the royal family of Europe, is *BOOR-bon* or *BOOR-bun*. As a rule the same is true of *Bourbon* as a place name in the United States. There is, however, one notable exception. In Kentucky the name of Bourbon County, which lies in the bluegrass country and gave its name to a famous variety of whisky, is invariably pronounced *BURR-bun* by the local people. Kentuckians often employ the word as a sort of shibboleth to determine whether a person unknown to them is a native of the state. It was not until after the Revolution that American distillers discovered that whisky could be made from maize or Indian corn. Before that it was taken for granted that good whisky could be made only from small grain, such as barley, rye, wheat and oats. In the early days of the state the entire northeastern part of Kentucky was included in one county named Bourbon. The name was probably regarded as appropriate because that region had once been part of the royal domain of the Bourbons of both France and Spain. The first corn whisky was made in Bourbon County soon after the Revolution. For many years thereafter Bourbon County included virtually all the state

that manufactured whisky commercially. Thus *Bourbon* came to be applied to Kentucky corn whisky and the name still persists. In the second edition of his *Dictionary of Americanisms; a Glossary of Words and Phrases Usually Regarded as Peculiar to the United States*, published in 1859, John Russell Bartlett defined *Bourbon* as follows: "Whiskey from Bourbon county, Kentucky. A term generally used to distinguish the better kinds of whiskey, which are mostly made from corn instead of rye." M. Schele de Vere, in *Americanisms; the English of the New World*, published in 1872, wrote that "we find the name of the royal *Bourbons* applied . . . now as a trade-term to a superior kind of whiskey distilled in the county of *Bourbon*, in the State of Kentucky, or to successful imitations." Sometimes *bourbon* is applied loosely to any corn whisky regardless of where it is produced, and domestic whiskies are divided into two main varieties, bourbon and rye. Kentucky still accounts for more than half of the whisky production in the United States.

Why is thirteen called a baker's dozen?

The true origin of *baker's dozen* is not known for certain, although several theories have been advanced to account for the phrase. During the thirteenth, fourteenth and fifteenth centuries many stringent laws were passed to regulate the baking and selling of bread in London. Some of these regulations are preserved in *Liber Albus, the White Book of the City of London*, compiled in 1419 and translated into English from Latin in 1859 by Henry T. Riley. Dealers, when purchasing bread, wrote Riley, "were privileged by law to receive thirteen batches for twelve, and this would seem to have been the extent of their profits. Hence the expression still in use, *a baker's dozen*." This is the generally accepted explanation of the phrase. That it is probably correct is strengthened by the fact that thirteen is sometimes also called a *printer's dozen* from the old practice of publishers and printers who allowed booksellers and hucksters their commission by selling them thirteen books for the price of a dozen. A correspondent informs the author that in Bogotá, Colombia, those selling bread make no profit on the individual loaf. The baker gives the retailer an extra loaf and that represents his profit; he sells the other eight, ten or twelve loaves for exactly what he paid for them. Some authorities, however, suppose the phrase arose from the fact that the London bakers gave an extra loaf for each dozen loaves to avoid all risk of incurring the heavy penalty for short measure, which was either a stiff fine or in some cases the gallows. But there is another angle to

the subject. *Baker's dozen* may be simply a corruption of *devil's dozen*, a still older name for thirteen. The number 13 has had evil and unlucky connotations for centuries and it was the number of witches formerly supposed to gather at the evil conclaves to receive their master's commands. The London bakers had a bad reputation in olden times and it is not improbable that the consumers of those days substituted *baker's* for *devil's* in a phrase already common. We read in Genesis 40:22 that Pharaoh "hanged the chief baker." Another name for thirteen is *long dozen*. Formerly it was a common practice to modify the name of a measure by *long* to denote a measure greater than that expressed by the simple noun. This usage survives in *long ton* for 2,240 pounds, *long hundred* for 120 pounds, and *long bit* for 15 cents.

Why is a British soldier called Tommy Atkins?

Tommy Atkins is the familiar nickname for privates in the British army and is applied to British soldiers collectively. It arose from the fact that *Thomas Atkins* was frequently used as a specimen name in the service record books issued in 1815 and later. In these manuals blank spaces were provided for the soldier's name, address, age, length of service, wounds received in battle, honors won in action—in short a brief résumé of his whole military record. As an aid in filling out these records, model forms already filled out were provided. The fictitious name generally used in the models was *Thomas Atkins*, although *William Jones* and *John Thomas* were also used. *Thomas Atkins*, however, was used on all model blanks for privates in the cavalry and infantry and consequently it became the most familiar to the soldiers. Many of these old books and blanks are still preserved in the library of the British War Office. One of them dated August 31, 1815, reads: "[Form of a Soldier's Book in the Cavalry when filled up.] Description, Service, etc., of *Thomas Atkins*, No. 6 Troop, 6th Regt. of Dragoons. Where born . . . Parish of Odiham, Hants . . . Bounty £6. Received, *Thomas Atkins*, his x mark." The following form was used in the same year for the infantry: "[Form of Soldier's Book in the infantry, when filled up.] Description, Service, etc. of *Thomas Atkins*, Private No. 6 Company, 1st Batt. 23rd Regt. Foot. Where born [etc] . . . Bounty £7. 7s. Received, *Thomas Atkins*, his x mark." The War Office has been unable to find any evidence supporting the legend that the original Thomas Atkins was a private whose name became familiar because he dropped dead of wounds while delivering a dispatch to the Duke of Wellington during the

Battle of Waterloo. Rudyard Kipling's poem entitled "Tommy" (1892) did much to popularize the term throughout the English-speaking world.

Do rattlesnakes shed their fangs?

Rattlesnakes and all other venomous snakes shed their fangs periodically. The functional fangs are replaced whether they have been damaged or are still intact. Nonvenomous snakes generally have two rows of functional teeth in the upper jaw. In venomous snakes, however, the upper jawbone is provided with two sockets on each side for functional fangs. Behind the functional fangs is a row of undeveloped successional teeth, each one waiting its turn to be connected with the poison gland and to perform its duty as a functional fang. During the process of replacement there is a brief period when the new fang and the one about to be shed are both functional. A rattlesnake in normal condition drops its functional fangs every six or eight weeks. Nature has provided these snakes with a magazine of potential fangs that is apparently inexhaustible. No matter how many times the fangs are extracted the rattlesnake will be rendered harmless only for a short time, for new fangs will soon replace those removed. The only effective way to render these serpents permanently harmless while alive is to remove not only the fangs but also the poison gland and a part of the bone to which the fangs are attached. This requires a difficult operation. The fangs of a rattlesnake are particularly well adapted for actually biting rather than for simply striking. Normally they lie horizontally against the roof of the mouth. When the snake strikes they are raised to a perpendicular position.

Does the top of a wheel move faster than the bottom?

This question gives many people trouble because they confuse the two motions of a wheel on a moving vehicle—its rotation on its axis and its motion forward. In relation to the road the highest point on the wheel moves forward with a much greater speed than does the lowest point. At any given moment the highest point and the lowest point are even, one being as far advanced as the other. As the carriage moves both points move forward, leaving the top and bottom positions respectively; but at the end of a quarter of a revolution the point that was at the top is the length of the diameter of the wheel farther forward than is the point that was at the bottom. The point on the wheel on the ground directly under the axle may be said to be momentarily stationary with respect to the road, because the road is

stationary and the wheel does not slip. It marks the point between the downward and upward motion of the revolution of the wheel—the end of the cycloid curve—and is neutralized between the forward movement of the carriage and the backward motion of part of the turning wheel. Thus, as the United States Bureau of Standards points out, with respect to the road the highest point of the wheel moves forward twice as fast as the center of the wheel, or any point on the vehicle itself, while, on the other hand, the lowest point momentarily stops. Of course with respect to the center of the wheel all of its parts rotate at the same rate. The wheel is a rigid object and obviously one part of it cannot revolve faster than another with respect to the center. It is because of the double motion of a wheel that any given point on its circumference travels considerably more than a mile while the vehicle travels that distance. The route of a point on the circumference of a carriage wheel is represented by what is known as the cycloid curve.

How can insects fly about in a moving car?

Insects can fly about in a closed car while it is moving because the air in which they are flying is traveling with the car. If an insect were to fly slowly above a fast-moving flatcar it would soon be left behind with that part of the atmosphere in which it was flying. Likewise, if a man in a moving car jumps straight up he will alight on about the same spot from which he jumped. His motion through space is the same as that of the train. He moves with the car, and since the air in the closed car moves with it also, there is no friction to hold him back while he is in the air. If a man did the same thing on an open car he would be held back by the friction of the air and would alight slightly to the rear of the spot from which he jumped. The United States Bureau of Standards estimates that if a person jumps straight up three feet on an open car traveling seventy miles an hour when there is no natural wind he will alight about fifteen inches farther back. Of course, the same principle applies to closed compartments in moving boats, ships, airplanes, trucks, etc. Many people have the erroneous notion that a bird or aviator flying high in the sky is left behind by the ground below as the earth rotates on its axis. Such is not the case. If it were, Charles A. Lindbergh could have gone north to the proper latitude, ascended to a considerable altitude and remained in the same vicinity until Paris passed beneath him! The atmosphere in which we move is just as much a part of the earth as the solid ground on which we walk. The entire earth, includ-

ing the blanket of air around it, is rotating upon its axis and revolving around the sun. It is absurd to suppose that the earth moves through the atmosphere. If such were the case, a terrific gale would be created by the earth speeding through space and every unattached object would be swept off. The atmosphere is held to the rest of the earth by gravity and goes with it because there is nothing in space to hold it back.

How did salt get into the ocean?

Theories attempting to account for the presence of salt in sea water are rather speculative and governed largely by the particular hypothesis advanced for the origin of the earth itself. Some geologists are of the opinion that most of the salt went into the primeval ocean virtually at its formation. Most geologists, however, assume that such salt is derived from the decomposition of rocks by flowing and percolating waters, which finally deposit their burden in the sea. This is certainly the source of a large part of the salt in the ocean. The sea is constantly receiving salt-laden water and at the same time losing water by evaporation. Since little, if any, of this salt rises in the vapor, the salinity of the ocean is gradually, though imperceptibly, increasing. It is not probable that the increase would be appreciable within any historic period. Many inland lakes are salty for the same reason. The streams flowing into them pass through soil and rocks that contain salt. There is no salt in fresh-water lakes because the streams flowing into them pass through regions containing little or no salt. The amount of salt dissolved in ocean water near the surface is not uniform. The average salinity of ocean water is estimated at thirty-five parts of salt to a thousand parts of water. There are two zones of maximum salinity. One lies north and one south of the tropical belts and they are separated by a zone of minimum salinity around the equatorial region. The highest salinity—37.9 parts of salt to 1,000 parts of water—is in the North Atlantic. In the South Atlantic the salinity is 37.6. Of course, the lowest salinity is in the vicinity of oceanic fresh-water currents.

Why do wheels in the movies turn backward?

When wheels with spokes are shown in motion pictures they often appear to rotate backward. This effect of spoked wheels turning backward results from the fact that a moving picture is merely a series of separate pictures. A small fraction of a second elapses between the successive clicks of the movie camera. In the brief interval the spokes

may travel a distance that will make them correspond exactly with the former position of the preceding spokes. In that event the spokes will be photographed in the same angular position at each successive exposure of the camera, the effect being that the wheel will appear to stand still while the carriage moves forward. However; if the spokes move forward a distance that causes them to break between their former position, a different situation is created. Considering always the position that the camera registered last as a basis, if the spokes are within one-half the distance between two spokes of this previous position in the direction in which the wheel is actually turning, each successive picture will show this changing position as revolving in the opposite direction, and the effect will be that the wheel will seem to turn backward while the carriage moves forward. Likewise, if the spokes project beyond the previous position up to one-half the distance between two spokes, the changing position will revolve in the same direction as the wheel itself, and, consequently, a forward motion of the wheels will be shown on the screen. All the spokes look alike to the eye, which therefore confuses them in fast motion and must depend on the deception of the successive positions of the spokes shown in the pictures. For years motion-picture producers have tried to find a satisfactory method of avoiding this annoying effect. Some producers even go so far as to avoid showing carriages with spoked wheels whenever possible. Timing the shutters of the camera to the rotating wheels with spokes has been tried. The problem has been partly solved by painting groups of the spokes in different colors, but this, of course, cannot be done in the case of news shots.

What harbor has double high tides a day?

The harbor of Southampton, England, is notable for having double high tides a day. According to a popular notion, this effect is due to the fact that the Southampton harbor receives high water from the English Channel first by way of the Solent, and two hours later by way of the Spithead, both the Solent and the Spithead channels being formed on one side by the Isle of Wight. Sir George Airy, in *Tides and Waves*, asserted that this theory is untenable. The effect of two high tides a day, according to that authority, is the result simply of tides produced by water running over a shallow bottom. The phenomenon of long-continued high water or double high water in estuaries is not uncommon. Every body of water has a natural period of oscillation, depending on its size and depth. An estuary or arm of the sea responds best to any disturbing force with a period of oscillation ap-

proximating its own period. Although Southampton has one of the finest natural harbors in Britain and this double tide is regarded as a peculiar advantage, a similar condition exists across the Channel at Le Havre, France, and on the coast of Holland, which points possess all the properties of an estuary in that the tidal water runs for a great distance over a shoaly bottom and then is suddenly stopped by the coast. In 1882 Sir William Thomson (Lord Kelvin) gave a lecture at Southampton on *The Tides*, in which he said:

The rise of the tide at Portland is interesting to the inhabitants of Southampton in this, that whereas here, at Southampton, there is a double high water, there, at Portland, there is a double low water. The double high water seems to extend across the Channel. At Havre, and on the bar off the entrance to Havre, there is a double high water very useful to navigation; but Southampton, I believe, is preeminent above all the ports of the British Islands with respect to this convenience. There is here a good three hours of high water;—a little dip after the first high water, and then the water rises again a very little more for an hour and a half or two hours, before it begins to fall to low water. . . . It is not merely the Isle of Wight that gives rise to the phenomenon. The influence extends to the east as far as Christchurch, and is reversed at Portland, and we have the double or the prolonged high water also over at Havre; therefore, it is clearly not, as it has been supposed to be, due to the Isle of Wight.

How did Newport News get its name?

On Captain John Smith's map of Virginia the site of Newport News is called Point Hope. The present name appears to be a corruption of *New Port Newce*, the name given to the place by Daniel Gookin, of *Newcetown*, County Cork, Ireland, who landed there November 22, 1621, with a shipload of cattle and supplies. With him came a number of Irish and English colonists who settled on part of a tract of land owned by Sir William Newce. Gookin named the place in honor of Sir William, who had founded Newcetown in Ireland and who, with his brother Captain Newce, came to Virginia in the same year and later became knight marshal of the colony and a member of its council. The name was generally spelled *Newce* or *Neuse*, although John Smith wrote it *Nuse*. Perhaps the spelling was somewhat influenced by the Neuse River, a stream rising in the Piedmont region of North Carolina near the Virginia border. British officers stationed at Newport News during the Revolution dated their reports from *New Port Neuse*. Formerly it was supposed that the name was in honor of Captain Christopher Newport, who took the first colonists

to Jamestown in 1607 and who several times made voyages from England with supplies and additional colonists. John Fiske accepted this theory because on several old maps he found it spelled *Newport Ness*. Since *ness* is an old English word meaning "cape," "headland" or "promontory," *Newport Ness* would be equivalent to *Point Newport*. In a pamphlet published in London in 1623 it is written *Newport's News*. This probably suggested the picturesque derivation of the name from the "good news" early in 1608 that Captain Newport had arrived with the "first supply." By that time all but about 40 of the original 104 colonists at Jamestown had died of hunger, disease and homesickness. Although derived from *New Port Newce*, it is probable that the name of Captain Newport influenced the final form of *Newport News*.

What causes "magnetic hills"?

In Hollywood, California, there is a hill popularly known as Magnetic Hill. It is said that because of some mysterious magnetic attraction in the earth at this point an automobile will ascend the hill without power and that power is required for going down. Of course all this is imaginary. The magnetic effect is not real, but the result of an optical illusion produced by the contrast in two grades. Anybody who has driven an automobile in the mountains knows that it is often hard for the driver to tell whether he is going uphill, on level ground or downhill. The motorist approaches Magnetic Hill on a fifteen-degree grade. As he proceeds up the grade he comes to a sharp curve. When the corner is turned he seems to be still going uphill. But if the motor is turned off the machine will coast. The fact is, after the motorist makes the curve he is going down a two-degree grade. Similar "magnetic hills" are common wherever roads wind around large hills or mountains. More frequently it happens that the driver thinks he is going downhill or on the level when he is in fact going uphill. It is the sharp contrast of two grades or two declines that produces the illusion. In 1939 an autoist at Leominster, Massachusetts, reported that his car backed 200 feet up a hill without the motor running. The phenomenon was explained by many on the ground that the motive power of the "magnetic hill" was provided by a natural deposit of magnetic loadstone under the road. But a local high school principal, more scientifically minded, attached a spirit level to the running board of his car and demonstrated that what appeared to be a hill was actually a downgrade of several degrees. The law of gravity is still in effect in Massachusetts as well as in California.

Belief in actual magnetic mountains was common in the Middle Ages. The Magnetic Mountain figures in some of the stories in *The Voyage and Travels of Sir John Mandeville* and in the *Arabian Nights*. This mysterious mountain drew all the nails out of any ship that approached within its influence.

How did *apple-pie order* originate?

This phrase signifies perfect or precise arrangement. A thing in apple-pie order is neat and tidy. The origin of the phrase is obscure. Some authorities suppose it to be derived from the manner in which apples are pared, sliced, cored and placed methodically in a pie before baking. In *A Dictionary of Slang, Jargon and Cant* (1889) A. Barrere and C. G. Leland observe: "Order is an old word for a row, and a properly made apple-pie had, of old, always an order or row of regularly cut turrets, or an exactly divided border." Apple pies are still sometimes so made. Others believe that *apple* in *apple-pie order* is a perversion of *cap-a-pie*, which is an Old French phrase meaning "from head to foot" and which occurs in modern French as *de pied en cap*, "from foot to head." It referred to a knight in complete armor or a soldier completely equipped and fully caparisoned from head to foot. In Shakespeare's *Hamlet* Horatio, describing the ghost to the prince, says it was "A figure like your father, armed at point exactly, cap-a-pe." But no such phrase as *cap-a-pe order* has ever been found. Still others think that *apple-pie order* may have been suggested by *alpha beta*, meaning as orderly as the letters of the alphabet. An apple-pie bed, familiar to boys, is a bed made up by a practical joker in such a manner that the folds of the sheets prevent the occupant from stretching his legs at full length between them. Here the allusion is to a turnover, a semicircular pie or tart made by turning one half of the crust over the other.

How often does the Dipper move around the North Star?

To observers in the Northern Hemisphere the constellation known as the Great Dipper or Ursa Major seems to move in a counter-clockwise direction around the North Star or Polaris once every sidereal day, which is twenty-three hours and about fifty-six minutes long—a few minutes shorter than the solar day. This motion, of course, is merely apparent, as it is the earth that is actually moving. The same apparent journey is made each sidereal day by all the other stars within a circle that has for its radius the distance of the North Star above the horizon. To observers in the Northern Hemisphere, stars within

this circle never set. This is because the axis on which the earth rotates points very nearly to Polaris, which therefore seems to be almost stationary and is known as the polestar. *Pole* is derived from Greek *polus*, "pivot" or "axis." In Latin *polus* signified "the end of an axis" or "the sky." Although the polestar is not exactly at the true pole of the heavens, it is only about a degree from that point and the circle that it seems to describe is so small that the unaided eye can see no change without making exact observations. Polaris is gradually moving, but at present its motion is still toward the true north point and it is becoming a "better" polestar. It will remain the approximate polestar for centuries to come.

Do snakes cover their prey with saliva?

The popular belief that snakes lick their prey with their tongues and cover it with saliva before swallowing it is very old. In *The History of the Dividing Line* (1729) William Byrd of Westover wrote: "The way these Snakes [rattlers] catch their Prey is thus: They Ogle the poor little animal, till by force of the Charm he falls down Stupify'd and Senseless on the Ground. In that condition the Snake approaches, and moistens first one Ear and then the Other with his Spawl, and after that the other Parts of the Head, to make all Slippery. When that is done, he draws the Member into his Mouth, and after it, by Slow degrees, all the rest of the Body." Naturalists are agreed that no species of snake licks its prey with its tongue and covers it with saliva before swallowing it. A considerable quantity of saliva is generated during the process of swallowing, but it does not come from the tongue, which is used merely as a sensory organ. The late Raymond L. Ditmars, curator of reptiles at the New York Zoological Park, wrote to the author as follows: "A snake does not cover its prey with saliva before swallowing it, except as the food passes into the throat. Very often a snake will attempt to swallow a large object in the wrong position, and when the reptile releases the portion which has been in its mouth, to grasp the object in a different place, the portion released from the mouth is covered with saliva." Dr. William M. Mann, director of the National Zoological Park at Washington, wrote in a similar vein: "The snake has very well developed saliva glands and these function so much during the process of swallowing that the prey is often covered with saliva. The belief that the snake licks the animal before swallowing it has no basis." Waldo L. McAtee, a government biologist, explained the phenomenon as follows: "Snakes do not customarily cover their prey with saliva before swallowing it. At

times, however, they may grasp it in a manner that will not permit it to be swallowed readily. When the snake discovers this, it may regurgitate the material and grasp it again. It is possible that the idea of snakes covering their prey with saliva comes from observing performances such as this." No doubt the popular notion was suggested also by the fact that many snakes play over captured prey with their forked tongues. When snakes first seize their prey they grab hold of any part of the body indifferently, but generally, although not always, they swallow it head foremost.

What is a *nigger* in the woodpile?

A concealed cause, reason or motive is called "a nigger in the woodpile." The expression originated in the southern states before the Civil War and referred to the supposed thieving propensities of the Negro slaves, who were frequently accused of stealing fuel. "There must be a nigger in the woodpile" was a common observation when fuel was missing. On June 3, 1862, during a debate in the United States House of Representatives on a bill empowering the president to send diplomatic representatives to Haiti and Liberia, William D. Kelley, a Republican representative from Pennsylvania, said: "The gentleman from Ohio [Samuel S. Cox] and my colleague [Charles J. Biddle] failed to follow these admirable examples, but spoke two whole hours, not in controverting the wisdom or justice of the bill, but in showing—to borrow an elegant phrase, the paternity of which, I think, belongs to their side of the House—that there was a nigger in the woodpile." This quotation suggests that the phrase was already proverbial in 1862. It has fallen into disuse in the United States, where *nigger* as a familiar form of *Negro* now has unpleasant connotations and is resented by Negroes.

Why are artificial limbs called cork legs?

Artificial limbs are called cork legs because such limbs were formerly made of steel or other solid material covered with layers of cork to give them the necessary resilience. In 1901 an elderly manufacturer of artificial limbs at Exeter, England, said limbs constructed partly of cork were still used in the time of his youth. Because no cork is used for this purpose now, many curious theories attempting to account for the popular name have been advanced by persons who did not know that cork was formerly so employed. Cork legs, according to one writer, were so called after their inventor, Dr. Richard Cork; and according to another the name arose from the alleged fact that the

chief makers of such articles were located in Cork Street, London. Still another derives the name from the supposed fact that these limbs were first made in Cork, Ireland. These theories are not confirmed by any evidence whatever and they are, in all probability, pure fiction. Artificial limbs were not invented by a doctor named Cork, they were not first made in Cork, Ireland, and Cork Street, London, was never noted for establishments engaged in making cork legs. The use of artificial limbs is ancient. The museum of the Royal College of Surgeons in London has an artificial leg of bronze, iron and wood that was exhumed from a tomb at Capri, Italy, and that was worn by a Roman about 300 B.C. About 1513 A.D. a German knight named Gotz von Berlichigen, known as "the Iron-Handed," wore an artificial iron hand weighing five pounds and so constructed as to grasp a lance or sword. Artificial limbs are now made of metal, plastics and wood. Wooden legs are made of linden, willow, buckeye, basswood and other light, strong and knot-free woods capable of being carved.

What is a King drag?

The King drag consists of the two slabs of a split log or two short planks pinned together. Drawing such drags over dirt roads after each rain or wet spell is called the King system. The drag received its name from David Ward King, a road specialist of Maitland, Missouri, who advocated the use of this type of road drag in the days when paved highways were few, and each farmer dragged the section of road adjacent to his land. King originally called his invention the split-log drag. In *Good Roads at Low Cost*, a paper written in 1910 for the Pennsylvania Railroad Company, King said the King drag was "so named by the road-drag enthusiasts of Iowa." Although King is properly credited with inventing the modern split-log drag bearing his name, a similar road drag was described in *A Manual of Road-Making* (1851) by William Gillespie, who wrote: "A very good substitute for the scraper, in leveling the surface of the road, clearing it of stones, and filling up the ruts, consists of a stick of timber, shod with iron, and attached to the tongue or neap obliquely, so that it is drawn over the road *quartering* and throws all obstructions to one side. The stick may be six feet long, a foot wide and six inches thick, and have secured to its front side a bar of iron descending half an inch below the wood." Under date of September 21, 1928, Mary B. King, widow of the inventor, wrote to the author: "The drag dates back to 1896—perhaps I can find proof of an earlier date, as I know that Mr. King dragged *his* road long before that with a piece of

wooden pump, and something else—I forget what. This he used until it went to pieces. By that time he saw what dragging the roads would do for them, and he made a *split-log drag*—as he called it—which was a log split, the flat sides turned to make the front, and fastened together with wooden pins. Next they began making them of heavy timber, and then came the change to the *King drag* instead of the *split-log drag*, the only difference being the change from the split log to the heavy timber. This change was made because it was so much easier to get the lumber than it was to get the logs.”

Are dealers required to offer cigars in the box?

In serving cigars dealers usually offer the entire box to let the customer make his own selection. Many people believe this practice is due to the fact that a federal law makes it illegal to return cigars to the box after they have been removed. There seems to be no reason for the practice other than the desire of dealers to avoid handling cigars, unless local sanitary laws require that cigars be left in the container until taken out by the purchaser. The present practice of wrapping cigars individually in cellophane or other sanitary materials decreases the need for such provisions. No federal statute or internal revenue regulation makes it illegal to return cigars to the box in which they were shipped or requires dealers to hold out the box to enable customers to pick out the cigars themselves. The United States Treasury Department says: “It is held that where a cigar dealer makes sales to a customer and takes a handful of cigars from a box in his show case, lays them on top of the case for the customer to make a selection, and returns the unsold cigars again to the box, there is no violation of any internal revenue law or regulation.” Perhaps the popular notion arose from a misconstruction of a provision of the internal revenue laws. The dealer would violate the law if he put other cigars into a box from which the revenue stamps had been removed. A federal statute provides: “Whenever any stamped box containing cigars, cheroots, or cigarettes, is emptied, it shall be the duty of the person in whose hands the same is to destroy utterly the stamps thereon.”

What is meant by the freedom of the seas?

Freedom of the seas is merely a popular term without definite meaning in international law. In a general way, however, it is the converse of *command or sovereignty of the seas* and is applied to the principle that all nations have equal rights on the high seas at all times. In 1580, when Spain had a stronger navy than England, Queen Elizabeth wrote

to the Spanish ambassador: "The use of the sea and air is common to all; neither can a title to the ocean belong to any people or private persons, forasmuch as neither nature nor public use and custom permit any possession thereof." In a pamphlet entitled *Mare liberum*, "Freedom of the Sea," published in 1609, the Dutch jurist and author Hugo Grotius set forth as a principle of international law the doctrine that the ocean is free to all nations. England had begun to exercise her "sovereignty of the seas" and in 1635 an English scholar named John Selden published and dedicated to King Charles I his *Mare clausum*, "Closed Sea," a quasi-state paper in which he undertook to refute the doctrine of Grotius. Complete freedom of the seas would mean that when two nations are at war neutral nations would have the right to carry on unrestricted commerce with either or both of them unless prevented from doing so by a complete and effective blockade of the ports. There would be no contraband of war, all articles of commerce, even weapons and munitions, being exempt from seizure on the high seas by the belligerents. This principle is at present accepted only in time of peace and nobody has yet seriously proposed to establish complete freedom of the seas in time of war. Nations engaged in war claim the right to curtail the freedom of the seas by "paper blockades" and by searching vessels on the high seas and seizing articles that they deem contraband. In fact the freedom of the seas in time of war is restricted by numerous treaties and principles of international law. The second of Woodrow Wilson's Fourteen Points dealt with this subject. As stated in President Wilson's address to Congress January 8, 1918, this point was: "Absolute freedom of navigation upon the seas, outside territorial waters, alike in peace and in war, except as the seas may be closed in whole or in part by international action for the enforcement of international covenants."

How did *sirloin* originate?

The derivation of *sirloin*, meaning the upper and choicest part of a loin of beef, is interesting chiefly because of a popular story told in connection with it. *Sirloin*, according to this story, arose from the fact that James I of England, while in a merry mood, knighted a choice cut of loin of beef and dubbed it *Sir Loin*. In 1617 James returned from a visit to Scotland and passed through Lancashire. Some distinguished person was knighted at nearly every place the king stopped. Three days were spent in dining and making merry at Hoghton Tower, near Blackburn, where, says John Roby in *Traditions of Lancashire*, the knight-making monarch "was more witty in his speech than usual."

"Whilst he sat at meat," to quote Roby further, "casting his eyes upon a noble surloin at the lower end of the table, he called out, 'Bring hither, as I may say, not *sur-loin*, but *sir-loin*, the noblest joint of all,' which ridiculous and desperate pun raised the wisdom and reputation of England's Solomon to the highest." The story may be true, for other Lancashire writers refer to it as one of the established traditions of the locality. One of the earliest references to this tradition on record occurs in Jonathan Swift's *Polite Conversations* (1732). But if James I did playfully knight a surloin of beef and dub it *Sir Loin* he was only imitating Henry VIII in making an obvious pun. Thomas Fuller, in his *Church History of Britain* (1655), wrote: "Dining with the Abbot of Reading, he [Henry VIII] ate so heartily of a loin of beef that the abbot said he would give one thousand marks for such a stomach. 'Done!' said the king, and kept the abbot a prisoner in the Tower, won his one thousand marks, and knighted the beef." Elsewhere Fuller wrote: "A *Sirloyne* of beef was set before him and so knighted, saith tradition, by this King Henry." Later writers erroneously attributed the famous pun to Charles II, "the merry monarch." Of course, the story does not account for the origin of *sirloin*, which is obviously derived from Old French *sur*, "upon," "upper" or "above," and *longe*, "loin." "The story about turning the loin into *sir-loin* by knighting it," says Walter W. Skeat, noted English etymologist, "is mere trash." Nevertheless the Oxford dictionary believes the famous pun may have influenced the adoption of the now prevalent spelling. Formerly the word was regularly spelled *surloin*, which Skeat regarded as preferable. During the fifteenth and sixteenth centuries the term was variously spelled phonetically *surloyn*, *serlyn* and *sirloyne*. In 1554 we find "a surloyn of beef" quoted in London at 6s, 8d. Joseph Addison, in a copy of *The Spectator* printed in 1712, spelled it *sirloin*. Samuel Johnson, probably the first lexicographer to adopt this spelling, says *sir* was "a title given to the loin of beef, which one of our kings knighted in a fit of good humor." Very likely the legend was largely responsible for the spelling *sirloin* instead of *surloin*.

How did Samuel Pepys pronounce his surname?

How Samuel Pepys (1633-1703), English admiralty official and author of the world's most famous diary, pronounced his surname will probably never be known for certain. It is generally believed that he pronounced it *PEEPS*. That pronunciation appears to have prevailed in England in the seventeenth century and still prevails at Cambridge

University, where Samuel Pepys was educated. Most families bearing the name at present pronounce it either *PEEPS* or *PEPP-is*. James Carcasce, a clerk in Pepys's office, suggested that the name may have been pronounced *PIPPS*. In *Lucida Intervalla*, written in 1679 during Pepy's life, he wrote:

Him must I praise who open'd hath my lips
Sent me from Navy to the Ark of Pepys.

H. B. Wheatley, who published the first complete edition of Pepys's diary between 1893 and 1899, believed the name was pronounced *PAPES*. Others contend that *PEPPS* is the correct pronunciation. A rhymster summed up the controversy in the following doggerel:

There are people, I'm told—some say there are heaps—
Who speak of the talkative Samuel as Peeps;
And some so precise and pedantic their step is
Who call the delightful diarist Pep-pis;
But those I think right, and I follow their steps
Ever mention the garrulous gossip as Peps!
Yet Wheatley declares that the truth still escapes—
For Peps was not Peppis nor Peeps—but was Papes.

From January 1, 1660, to May 31, 1669, Pepys wrote down in his own system of secret shorthand an intimate record of his daily life, observations and reflections. The original manuscript in six volumes is at Magdalene College, Cambridge. Pepys's system of shorthand was first deciphered by the Reverend John Smith, who in 1825, after several years of laborious work, published part of the famous diary.

What king of England could speak no English?

George I, king of England from 1714 to 1727, could neither speak nor write the English language. He was the son of Ernest Augustus, Elector of Hanover, and Sophia, granddaughter of James I of England. This German prince became the heir to the English crown on the theory that the blood of James II in the direct line was *corrupted*. When at the age of fifty-four he succeeded Queen Anne as sovereign of England he exhibited no desire to learn the language of his new kingdom and never made any attempt to do so. In fact he took more interest in his German principality than he did in the British Empire. His son and successor, George II, who reigned from 1727 to 1760, spoke and understood English very imperfectly. The fact that the first two Georges did not speak and understand English readily had an important influence on the development of the British cabinet system.

King William III and Queen Anne presided over the meetings of the cabinet and personally directed the deliberations of their ministers. But George I and George II, unable to converse with their ministers, stayed away from cabinet meetings and took little part in public affairs. When George III, who could speak English fluently, became king in 1760 the practice of independent deliberations of the cabinet was firmly established and became a precedent that has never been departed from. William of Orange, who reigned jointly with his wife Mary from 1689 to 1694 and as sole sovereign from 1694 to 1702, was Dutch in nationality and knew very little English. "William," wrote Thomas Babington Macaulay, "was not sufficiently master of our language to address the Houses from the throne in his own words; and on very important occasions, his practice was to write his speech in French, and to employ a translator." French was the native language of the English kings for many generations after the Norman Conquest in 1066. In 1362 Edward III ordered the use of English in the courts, but the laws of England continued to be written in French until the eighteenth century.

What is a placer mine?

A placer mine is a deposit of sand, gravel or earth that is washed to obtain particles of gold or other valuable minerals. In American mining law *placer* embraces all forms of mineral deposits except veins in place. The term is derived indirectly from Spanish *plaza*, "place." In Spanish *placer* signifies "sandbank," and the Mexicans applied *placer* to a sandbank where gold in the free state was found. *Placer* came into general American use about the time of the California gold rush of 1849, when the term was applied specifically to surface deposits in the beds of streams where nuggets and particles of gold were separated from the earth or gravel by shaking it with water in a circular pan with sloping sides. If considerable gold was found the miners said the gravel panned out and was pay dirt; but if no gold, or very little, was found the miners said it did not pan out. A writer who toured New Mexico in 1848 wrote: "The old and the new Placer, near Santa Fe, have attracted most attention, and not only washes, but some gold mines, are worked." The New York *Evening Post* of February 22, 1909, contained the following reference to placer or surface mining: "A placer-mine was the ideal poor man's mine, from which, with the simple contrivance of a sluice-box, he washed out the precious nuggets of gold from the gravelly soil of mountain gulches." Those unfamiliar with mining terminology and the tradi-

tions of the early West generally mispronounce *placer* in this sense. It is not pronounced like *placer* in the sense of "one who places." The *a* is short as in *placid*, not long as in *play*, and the correct pronunciation is *PLASS-er*.

Do horses pull most with their front or hind legs?

Most of the propelling and pulling power of a horse lies in its hind quarters. In the horse the center of weight lies immediately behind the shoulders and the chief function of the front quarters is to support the animal's weight. The hind legs are attached to the trunk by the powerful ball-and-socket joints, while the forelegs, instead of being directly attached to the trunk, are connected merely by intervening muscles that serve as a sort of sling in which the body is suspended between the forelegs. The following interesting statement on the subject appears in *Types and Market Classes of Live Stock* by Henry William Vaughn:

We have seen that the horse is rather unstable because the center of weight lies almost over the fore legs. Hence the fore legs answer the purpose simply of a support to the horse's weight when he is in motion. If we could replace the fore legs with a wheel, we would have an equally efficient motor. When a man walks, he leans forward in order to throw the center of his weight ahead of his base of support. This causes him to begin to fall forward, and indeed he would fall if he did not advance his foot and so bring his base of support once more under, or nearly under, the center of weight. Walking is simply a succession of interrupted falls. The same is true of the horse. In walking he pushes backward against the ground with his hind feet, and causes his center of weight to tip forward. The result is that he begins to fall, and if he did not advance a fore foot he would land on his head. By stepping forward he again assumes his equilibrium and immediately tips his weight forward again by propelling with his hind legs. Walking is simply the repetition of this performance over and over again.

What causes "the man in the moon"?

The surface of the full moon is marked with irregular dark lines and spots that suggest various shapes and forms when observed with the naked eye. These imaginary figures, which are shaped to suit the fancy of the particular observer, disappear when the moon is viewed through a telescope. They are produced by what astronomers call albedo, that is, the difference in the reflective powers of various locations. The difference is due partly to elevations and depressions—"mountains and valleys"—and partly to the various materials of which the surface of the moon is composed. Astronomical evidence tends to

show that there is neither water nor atmosphere on the moon and hence the popular notion that the markings are the outline of a continent is erroneous. Peoples of all races in all ages in all parts of the world have fancied various figures on the face of the full moon. Most people imagine that the markings resemble a man or a man's face. "The man in the moon" is used as the type of an imaginary person. Some people insist that the markings suggest to them the profile of a woman's head rather than a man's full face. Formerly it was customary to fancy a man leaning on a fork and carrying a bundle of brushwood. This figure, it was said, represented the man who was stoned to death for gathering sticks on the Sabbath, as related in Numbers 15:32-36. Sometimes a dog was included in the picture. Shakespeare refers to this notion. In *A Midsummer-Night's Dream* Moonshine says: "All that I have to say, is, to tell you that the lanthorne is the moon; I, the man i' the moon; this thorn-bush, my thorn-bush; and this dog, my dog." In *The Tempest* Stephano assures Caliban that he had dropped out of the moon and was "the man i' the moon when time was," and the credulous monster replies, "I have seen thee in her, and I do adore thee; my mistress show'd me thee and thy dog, and thy bush." It has been suggested that changes on the moon through the centuries may account for the fact that these fanciful figures do not appear the same to us as they did to our forefathers. Of course, the configurations of the full moon do not appear in the same position from all points on the earth. They appear in vertical, horizontal, reversed and all intermediate positions, depending on the observer's latitude and the angle of the moon. Thus "the man in the moon" appears upside down to observers twenty-nine degrees or more south of the equator, as in Argentina and Chile. Nobody has ever seen the back of the moon, because as it moves around the earth it rotates just enough to keep the same side toward the earth at all times.

Is *Robinson Crusoe* a true story?

Daniel Defoe's *Robinson Crusoe* is fiction and was based on actual events only to a slight extent. The story was inspired by the experiences of Alexander Selkirk, who was born at Largo, Scotland, in 1676, the son of a shoemaker and tanner. When Selkirk was nineteen he was summoned by the local kirk session on charges of "indecent behavior in church." Instead of answering the summons Selkirk ran away to sea. In 1703 he joined a buccaneering expedition to the South Seas under William Dampier, navigator and hydrographer, and was made sailing master of the galley *Cinque Ports* commanded

by Captain Thomas Stradling. The next year the *Cinque Ports* put in at Mas-a-Tierra, the larger of the two Juan Fernández Islands, which lie in the Pacific about 430 miles west of Valparaiso, Chile. While there Selkirk quarreled with the captain and at his own request was put ashore with a few necessities of life. He quickly changed his mind and before the vessel sailed begged to be taken aboard, but Stradling would not listen to him and the seaman was compelled to live four and a half years on the lonely island, where he was picked up in 1769 by Captain Woodes Rogers, commander of the privateer *Duke*. Dampier was pilot of this privateer and he made Selkirk his mate and later gave him the command of a prize ship. The remarkable experiences of the Scotch seaman on Mas-a-Tierra became generally known in 1712 when Captain Rogers published his *Cruising Voyage Round the World*. Richard Steele, the essayist, did much to call attention to Selkirk's adventures. A second edition was printed in 1718 and a year later Defoe published *The Life and Strange Surprising Adventures of Robinson Crusoe*, the general idea of which was clearly suggested by the book of Rogers. It is said that Selkirk told much of his story to Defoe in person at a meeting at Bristol in the home of Mrs. Demaris Daniel, and the Scotch seaman, who went about dressed in animal skins, later told that lady that he had turned his papers over to Defoe. Although in a sense Selkirk was the prototype of Robinson Crusoe, he was never shipwrecked, and Defoe did not stick to the details of Selkirk's story. Defoe got much of the color and background for his story from an old basket maker who had been to sea and to whose yarns he used to listen as a boy. After finishing the book, Defoe himself wrote to a friend: "I have put into it something of Selkirk, something of my imagination and a great deal of Skippy, the basket maker. If it proves to be a good story, it is largely because of what the old man gave me." As a fiction writer Defoe did not necessarily lay the scene on any particular island. In fact the story makes it clear that the "Island of Despair," the only name ever given to the island in the book, was located on the Atlantic side of South America, probably in the Caribbean. The inhabitants of Tobago, a tiny volcanic island near Trinidad, claim that their island best fits Defoe's descriptions, and a cave on the side facing Trinidad bears the name "Crusoe's Cave." This island shifted back and forth among the Spanish, English and French twenty times during the sixteenth, seventeenth and eighteenth centuries. Less than half of the book deals with Robinson Crusoe's life on his island. Defoe took part in the ill-fated attempt of the Duke of Monmouth to overthrow James II

in 1685, and after Sedgemoor he hid in a graveyard. It is said that the name *Robinson Crusoe* on a tombstone near which he was hiding made such an impression on him that he afterwards used it as the name of the hero of his masterpiece. It is an interesting coincidence, if it is a coincidence, that Robinson Crusoe was away from England and on his island from 1659 to 1687, the twenty-eight years during which Charles II and James II, the second Stuart period, were on the throne. Defoe's story had an immediate and wide appeal, not only because of the inimitable style in which the adventures of the hero were told, but also because it pictured a civilized man alone on an island. The book had many imitators and it is said to have been translated into more foreign languages than any other book composed in English. Daniel Defoe was the son of a London butcher named James Foe. The author was christened Daniel Foe but added the *De* to his surname after he gained fame as a writer. He used the names Foe and Defoe indifferently until late in life. A series of letters that he wrote to one person and which are still extant are variously signed "D. Foe," "de Foe" and "Daniel De-Foe."

Why is the sky blue?

What we call the sky is merely the limit of our vision into the atmosphere. The sky, like the horizon, is always as far away as one can see. The white light of the sun is composed of orange, yellow, green, blue, indigo and violet rays. A blue object is one that absorbs all the rays of white light except those that produce the effect of blue. It so happens that the atmosphere under ordinary conditions breaks up and scatters the white sunlight in such a manner that we receive the blue rays. If one could rise completely above the atmosphere into the ether, the vault of the heavens would appear black. Scientists are not agreed as to whether the blueness of the sky is due primarily to the component particles of air, nitrogen and oxygen, or to dust particles, water vapor and other impurities suspended in it. The conventional theory, which goes back to experiments made by John Tyndall (1820-1893), is that the color of the sky is produced by the reflection of the countless dust particles in the atmosphere. There is evidence, however, to support the view that the air molecules themselves in the outer atmosphere scatter the light and are the chief factors in producing the blue effect. The sky appears bluer where there is least dust in the direction of the visual ray, and the blueness deepens toward the zenith and with the elevation of the observer. Persons who have ascended into the stratosphere to altitudes of ten

miles or more tell us that the sky in broad daylight has a deep, dark blue or violet color. Captain Albert W. Stevens, who participated in the National Geographic Society-United States Army Air Corps Stratosphere Expedition of 1934 as scientific observer, wrote as follows in the October, 1934, number of the *National Geographic Magazine*: "At the top of our flight" (60,000 feet altitude) an extraordinary phenomenon was visible through the upper porthole. As we looked through the ports that were 45 degrees from the vertical, the sky was the rich dark-blue color associated with high mountain views; but from the vertical port the sky was like black velvet on which ink had been spilled and dried—it was black with just the merest touch of dark blue. It looked as dark as the sky at the time of an eclipse of the sun when stars may be seen." After the second expedition (1935) Captain Stevens reported that at an altitude of nearly fourteen miles the sky appeared to be dark blue, almost black in color. The rays of the sun produce different color effects when they pass through layers of atmosphere laden with dust and water vapor, and it is known that the size of the refracting and reflecting particles, combined with the particular slant at which the light rays strike them, determines the color of the mass. The sky is generally lighter near the horizon because the rays of the sun reach the observer through a thicker layer of atmosphere where the dust particles are larger and relatively more numerous. Skies over thickly settled regions and industrial districts have decreased in blueness owing to the increased smoke, dust and other impurities in the air. The color of the sky is an indication of the presence of water vapor and dust in the atmosphere and accordingly plays a part in forecasting weather.

Why does salt melt snow?

Salt melts snow and ice by physical rather than chemical action. The freezing point of a solution is always lower than that of its solvent. When Gabriel Fahrenheit, the German physicist, was experimenting with varying degrees of temperature he found that the lowest temperature he could obtain was produced with a mixture of salt and ice. Salt mixed with snow or ice at a temperature not too far below the freezing point forms a solution with a lower freezing point than water, snow or ice. That is why salt causes snow and ice to melt. If salt is mixed with snow in extremely cold weather little change is noticed, because the resultant liquid freezes as fast as it is formed. Ice and salt make an excellent mixture for freezing ice cream. The cream is not frozen by taking cold from the ice, as popularly

supposed; it is frozen because its temperature is lowered by the absorption of heat by the melting ice. It is impossible for ice to melt without absorbing heat and a freezing temperature cannot be obtained inside an ice-cream freezer unless the ice is melted. Salt is added merely to hasten the melting of the ice and to speed up the freezing of the cream by taking heat away from it.

How are the sizes of shoes determined?

In the United States, Great Britain and the British dominions shoe sizes are based on English inches, beginning at the fourth inch. The gradations of length are in units of one-third of an inch; that is, the full sizes progress at the rate of three to the inch. Sizes for children's shoes begin with the number 1, measuring from the fourth inch, and run to 13; those for adults begin where the sizes for children's shoes end and start with 1 again, measuring from the same point, and run to 12 or 13. Thus the size 1 represents a child's shoe $4\frac{1}{3}$ inches long, and number 13 represents a shoe $8\frac{1}{3}$ inches in length. Likewise number 1 represents an adult's shoe $8\frac{2}{3}$ inches in length, and size 13 represents a shoe $13\frac{2}{3}$ inches long. Every shoe manufacturing country except the United States, Great Britain and the British dominions bases its shoe measurements on the continental system, the sizes being expressed in terms of centimeters. For instance, an adult shoe size 9, representing $11\frac{1}{3}$ English inches, corresponds to $43\frac{1}{3}$ centimeters in the continental system. The history of the method of determining shoe sizes is somewhat obscure. Shoe measurements began, according to a legend, when King John of England stamped his foot on the ground and said, "There is a foot; let it be the measurement from this time on." All shoes were made on the same type of last in England until 1785, when right and left lasts were introduced. In the days of handmade shoes there was no need for shoe sizes. The cobbler simply measured the feet of his customer and made the shoes to fit the individual. In 1886 a group of last manufacturers met in Boston and, after deliberating two days, delegated one of their number to draw up a report on the standardization of the last. The man so delegated took a large piece of wrapping paper, laid it on a table and within two hours evolved the standards that have been followed by the shoe industry ever since. All shoe measurements begin with the last on which the shoe is made and the last is measured for length with what is known as a size stick, the measuring device that has been used by the shoe trade for generations. Measurements for the width of a shoe are more complex. Both the girth of the last and the width of its tread

surface must be taken into consideration. The difference between widths on the girth of the last is one-quarter of an inch, while the difference on the tread at the widest point, or the ball, generally is one-twelfth of an inch. Width measurements on the tread surface, however, are subject to the whim of the particular manufacturer. The United States Department of Commerce prepared the following statement for the author on the subject of shoe widths and sizes:

Shoe widths are indicated by letters, alphabetically, *e.g.*, AAA, AA, A, B, C, D, E, the first letter standing for the narrower widths and indicating progressively wider widths to E. By width is meant the amount of ball room in the shoe, *i.e.* the widest part of the fore-part of the shoe. Combination lasts are often used, by which is meant, an A width may be used for the heel and a B width for the ball. This gives a snug fit to persons having small-boned ankles. Some manufacturers indicate sizes and widths by numbers, *e.g.*, the number 245 represents size 4½ B. The first figure stands for the width, the second for the size and the third is used to indicate the whole or half sizes. To indicate a whole size a cipher is employed instead of the figure 5; for instance, 240 represents size 4B. A is represented by the figure 1; B by 2, C by 3, etc. For widths narrower than A, ciphers are employed; for instance, AA is shown by one cipher; AAA by two ciphers, etc.

In the standard system of measurements the difference between the width sizes represents one-quarter of an inch. Many people are sensitive about the size of their feet and therefore manufacturers, to please such customers, mark their product with what are known as "blind" or "French" sizes. The customer cannot easily determine the actual length and width of shoes so marked. There are about 130 standard shoe sizes for women and about 100 for men.

Why is a kind of evergreen tree known as spruce?

Spruce in Middle English was the common form of *Pruce*, "Prussia," and that Germanic state was known as "Sprucia" or "Spruceland." It seems to be well established that the spruce fir, a member of the pine family of trees, was so named from having been first known in commerce as a native of Prussia. This theory is supported by the fact that *Spruce* for *Prussia* occurs in the English names of numerous products exported from Germany to England by the Hanse merchants, as spruce leather, spruce canvas, spruce boards, spruce chests and spruce beer. *Spruce* in the sense of trim, neat, dapper or smarter than usual in apparel comes from the same source. To dress sprucely or "to spruce up" originally meant to dress in the Spruce or Prussian manner, particularly in the smart Spruce or Prussian leather jackets that were the

fashion in the sixteenth century. *Spruce* in its modern sense occurs three times in Shakespeare. In *Love's Labour's Lost*, Holofernes says Armado is "too picked, too spruce, too affected, too odd," and later in the same play Biron refers to "Taffeta phrases, silken terms precise, three-pil'd hyperboles, spruce affectation, figures pedantical." In *The Taming of the Shrew* Gremio asks Petruchio's household servants: "Now, my spruce companions, is all ready, and all things neat?" Some writers have questioned the derivation of *spruce* from *Pruce* because they could not account for the prefixed *S* and because the Germans call the tree *Splassen fichte*, "sprout fir," from *spriessen*, "sprout." But that *spruce* is an alteration of *Pruce* is seemingly established by an unbroken chain of etymological evidence. Spruce beer may not have received its name directly from the name of the country, although a product from Prussia was already so referred to in 1741. It is a fermented beverage made from a sweetened concoction of spruce leaves and twigs or flavored with spruce extract and it was probably named after the tree long after the tree had come to be called spruce.

How many professions are there?

Originally *profession* referred only to the abstract, and one's profession was whatever he professed. Later it came to signify the calling, vocation or occupation that a person professed to follow for a livelihood. In Shakespeare the practice of medicine, gardening, grave digging, highway robbery, thievery, prostitution, fortunetelling and all sorts of trades are referred to as professions. As time passed the term was applied less and less to trades and handicrafts and more and more to vocations that required a knowledge of some department of learning or science and gave the "professors" a social standing superior to that given by occupations that required skill with the hands but no particular learning. At one time there were three recognized "learned professions"—divinity, law and medicine. Gradually the number of higher callings increased and the term was extended to include other vocations. It is by no means easy sometimes to distinguish clearly, in the looser sense of the term, between professions and other callings by which people habitually earn their living. Nowadays we speak of the teaching, dental, journalistic, military and theatrical professions, and the daughters of Belial are still said to belong to "the oldest profession in the world." Just what entitles a person to be called a professor is hard to say. In a technical sense the title is generally restricted to teachers of the highest grade who hold special positions in colleges and universities and who rank below the dean of

a department or school and above assistant professors. All such ranks are designated and formally conferred by the college authorities. In common parlance, however, the title of professor is applied loosely to any teacher irrespective of rank. Even a country schoolteacher, as well as a teacher of dancing, is called professor. The title is applied also, more or less humorously, to magicians.

Do birds sleep with the head under the wing?

Contrary to a common notion, birds rarely if ever sleep with the head under either wing. Many species do, however, place the bill among the feathers between the body proper and the butt of the wing while sleeping and this posture gives the casual observer the impression that the head is under the wing. The shoulder feathers under which birds often put their heads are known to ornithologists as scapulars. For some unknown reason birds that sleep in this posture generally turn the head to the left. In *Two Years Before the Mast* Richard H. Dana describes an albatross "asleep upon the waves, with his head under his wing." It is very doubtful whether any bird, wild or domestic, ever sleeps in that fashion and the author probably was guilty of careless observation. Unfortunately many people received their knowledge of the sleeping habits of birds from the old nursery rhyme, which says:

The north wind doth blow,
And we shall have snow;
What will the robin do then, poor thing?
He'll go to the barn
And keep himself warm,
And put his head under his wing, poor thing.

A species of bird in the East Indies known as the serindit has the unique habit of suspending itself under a limb and sleeping upside down.

Does lightning really zigzag?

The sharp zigzags of lightning paths, often represented in conventional drawings, are purely imaginary. Lightning curves, twists, meanders and branches like the limbs on a tree or the tributaries of a river, but it does not turn in acute angles or travel in a zigzag combination of straight lines. In 1856 James Nasmyth, a Scottish engineer and the son of a landscape painter, called this fact to the attention of the British Association for the Advancement of Science. After making

observations over a period of years and comparing notes with his artist father the engineer concluded that the zigzags of lightning existed only in the imagination of artists. His opinion has been confirmed by photography and accepted generally by science. An occasional sharp angle in a photograph of lightning is believed to be due merely to improper perspective. Nasmyth suggested that probably the zigzag conception of the path of lightning originated with the ancient Greek sculptors who so represented the thunderbolt in the hand of Jove. Joseph Turner (1775-1851), a famous English landscape painter who preceded Nasmyth, had correctly observed the path taken by lightning and in some of his pictures it is scratched with a penknife in short curved dashes.

What species of parrot is accused of killing sheep?

The kea, a New Zealand parrot that is crowlike in size and rusty green in color, is reputed to have acquired the habit of attacking live sheep for the purpose of obtaining the fat about the kidneys. This species is indigenous to the mountains of the South Island where it nests in crevices of cliffs, often amid the snow and ice. Its ordinary diet is roots, seeds, berries, grubs and insects. It is said that soon after Europeans settled on the island and established sheep ranches in the uplands, the keas, which travel in large flocks, formed the habit of hanging around the pens and slaughterhouses with a view of picking up offal and discarded parts of the carcasses. In this manner, according to the usual story, the parrots acquired a taste for fresh mutton and soon began on their own account to attack living sheep, especially those with sores or wounds. After discovering this ready and ample source of food the keas became more particular and showed a decided preference for the fat around the kidneys. Alighting on the back of a sheep and taking a firm hold with their large, strong feet, they would cut through the skin and flesh of the loins with their powerful pickaxe-like bills and devour the fat around the kidneys, after which they would abandon the victim to die in agony and go in search of another. The alleged loss in sheep from this cause became considerable enough to induce the New Zealand government to offer bounties with a view to exterminating the parrots. Some authorities believe that these stories about the kea are either entirely untrue or greatly exaggerated. Some years ago a British ornithologist named Syndey Porter, after making a study of keas in their New Zealand habitat, reported to the American Nature Association that he could find no evidence of the sheep-killing habit and never met anybody who had seen these birds kill a

sheep. He branded the sheep-killing story a cruel bit of bird mythology that originated and was fostered by the fact that these birds are very inquisitive and may often be seen examining a dead sheep. In captivity keas are quiet, social, playful and good-humored birds and make excellent pets. Dr. E. Emerson Brown, director of the Philadelphia zoo, reported that keas persistently refuse to eat meat and live on sunflower seeds, apples and an occasional carrot and a little lettuce. But the sheep-killing charge against keas still persists. As late as 1943 a report from New Zealand quoted sheepmen as saying that keas were killing an increasing number of sheep and as demanding that the government permit shooting the birds in parks and other restricted areas, where they have multiplied under the protection of the bird laws.

How did Mount Desert Island get its name?

Mount Desert Island, lying off the coast of Maine, was discovered in the fall of 1604 by Samuel de Champlain while exploring the Acadian coast west of St. Croix. Champlain named the Island *L'Isle des Monts Deserts*, "The Isle of Desert Mountains," because from where he saw the island the rocky summits of the mountains appeared bare, wild and solitary. When he named the island, Champlain may also have had in mind the name of his patron, Pierre du Guast, Sieur de Monts, who is known in history as Sieur de Monts. Sieur de Monts was a Huguenot and a favorite of Henry IV of France. He visited the St. Lawrence in 1603 and in 1604-1605 he and Champlain explored the coast from New Brunswick to Cape Cod. As director of the Canadian Company, Sieur de Monts in 1605 founded the first colony in New France (Canada) at what is now Annapolis Royal, Nova Scotia. At that time *Acadia*, later restricted to a district in Nova Scotia, was applied by the French to a vast region along the coast. The English rendered *L'Isle des Monts Deserts* simply *Mount Desert Island*. The island is fifteen or sixteen miles long and six or seven wide, and as early as the 1870's it had become a fashionable summer resort because of the beauty of its mountain and lake scenery. In 1916 some 5,000 acres south of Bar Harbor was set aside by President Wilson as the Sieur de Monts National Monument to commemorate the founding in 1604 of the first European settlement in North America north of the Carolinas by Sieur de Monts. It was the first national monument and park created east of the Mississippi and is the only one bordering on the Atlantic. In 1919, after the area had been almost doubled, the Sieur de Monts National Monument was given the status of a national park and its name changed to Lafayette National

Park in honor of the memory of the French Revolutionary hero. Again in 1929 Congress changed the name to Acadia National Park and provided for further enlargement. The "mountains" on Mount Desert Island are the highest adjacent to the American Atlantic coast. In spite of the impression that Champlain had of the island, in parts the vegetation is exceptionally vigorous and luxuriant; but in the discoverer's day *desert* still implied a deserted or unpeopled wilderness rather than a barren place.

What country was called "the sick man of Europe"?

Before the First World War Turkey was often referred to as "the sick man of Europe," which alluded to the fact that the Ottoman Empire was gradually disintegrating and almost through as a European power. The nickname was popularized by a remark made in 1853 by Nicholas I of Russia to the British minister at Petrograd. According to the British *Blue Book* of 1854, the Czar of all the Russias said in a conversation with Sir George Hamilton Seymour: "We have on our hands a sick man, a very sick man, and it would be a pity to let him pass away without making the necessary arrangements." The Russian ruler, of course, had in mind the division of the spoils in the event the Ottoman Empire should fall to pieces or be broken up. But this idea was not original with Czar Nicholas I. It had been customary for more than a century to compare the Turk with a sick man. Sir Thomas Roe, who was British ambassador at Constantinople from 1621 to 1628, wrote that the Ottoman Empire had "the body of a sick old man, who tried to appear healthy, although his end was near." In his *Persian Letters* (1721) Montesquieu referred to the Turkish Empire "whose sick body was not supported by a mild and regular diet, but by a powerful treatment, which continually exhausted it." "Your Majesty," wrote Voltaire to Catherine the Great many years later, "may think me an impatient sick man, and that the Turks are even sicker." The First World War stripped Turkey of most of her once great empire in Asia, Africa and Europe and left her a comparatively small republic, chiefly in Asia Minor. Under the leadership of Kemal Atatürk the seat of government was transferred to Ankara. On November 1, 1922, the Grand National Assembly declared that the office of sultan had ceased to exist. Sixteen days later the last of the sultans of Turkey left Constantinople in secret. The office of caliph, previously vested in the person of the sultan, was to be filled by election from among the princes of the house of Osman, but in 1924 it was completely abolished. Islam was disestablished. Church and

state were sharply separated. Moslem priests were stripped of their privileges. Religious teaching in public schools was prohibited. Sunday, instead of Friday, was declared the Sabbath. The Gregorian calendar was adopted. Western numerals and a Latinized alphabet were introduced. The veil and the fez were banned. Polygamy was barred. Women were granted the right to vote, to hold public office and to serve in the army. Under the fifteen years of the presidency of Kemal Atatürk, Turkey as a republic made more progress in the ways of civilization than the Ottoman Empire had during centuries under the sultans. The origin of the Turks, like that of most other peoples, is enveloped in obscurity. Some authorities suppose the modern Turks are descended from Scythians and roving Tartars who at one time possessed the vast regions of northern Asia and, after overrunning much of Asia, conquered Turkestan, from which they received the name Turks. The Turks call themselves Osmanli, from a Turkish chieftain named Osman who established himself in Asia Minor in the fourteenth century. This was the beginning of the Turks as a separate nation. The Turks had acquired a strong foothold in Europe before they captured Constantinople in 1453 and became a European power. In their language *Türk* signifies "rustic" or "clown" and consequently they never apply the term to themselves.

Why are condemned persons executed at sunrise?

It is impossible to say just how dawn became the favorite time for executions. The custom of putting condemned persons to death early in the morning has been prevalent since ancient times and one writer suggests that it may be a survival of the practices of prehistoric sun worshipers who offered human sacrifices to the sun as it rose in the east. Another thinks the practice is of military origin; persons condemned in the military are generally shot as early as possible on the specified day, that is, just as soon as it is light enough for the firing squad to see to take aim. Still another suggests that the practice may be linked with the common notion that the greatest number of persons who die naturally die in the early hours of the morning. Whatever its origin, there are several reasons for following the custom at the present time. Generally death sentences provide that the person condemned to death shall be executed within a certain week, and sometimes the particular day an execution is to take place is set by the court; but the exact hour is generally left to the discretion of prison officials in charge of the arrangements, and wardens set a time that they consider satisfactory. Usually the unpleasant task is performed when it

will interfere least with the routine of prison life—as early as possible in the day, when the prisoners are in their cells and most of them are asleep. An execution has an unfavorable effect on all the inmates of a prison and if the condemned prisoner were executed during the day or early in the night his fellow prisoners might be incited to riot. Where executions are public the number of morbid spectators is reduced by having them at dawn. In Pennsylvania executions used to take place at seven o'clock in the morning, but in 1934 the time of day was changed to 12:30 P.M. because the early morning hour was regarded as hard on the condemned person and inconvenient for those in charge of the execution. In New York executions take place at eleven in the evening. But dawn is still the time for executions in most of the states.

What is meant by the German Reich?

Reich is a German word signifying literally “realm” or “commonwealth” and figuratively “state,” “kingdom” or “empire.” Some authorities suppose that *reich* and *realm* are from the same Teutonic root, but it is more probable that *reich* is from German *reichen*, “to reach,” and originally alluded to the lands embraced by a people of the same language and culture. During the days of the German Empire it became customary to speak of the empire as the Reich to distinguish it from the kingdoms, provinces, confederacies and other political units composing it, very much as Americans speak of the federal government as distinguished from the state governments. The Deutsches Reich was the whole realm of the Germans, who sometimes referred to Germany as it existed before the German Empire as “the old Reich.” Under the empire *Reich* acquired a peculiar meaning among Germans, who associated the term with *empire*, and after the abdication of the Kaiser in 1918 many Germans insisted that there could be no German Reich without a German emperor; but the name survived as the common appellation of the nation. First, Second and Third Reich are applied to the three successive systems of government in Germany since 1871. The empire was the First Reich; the postwar republic under Presidents Ebert and Hindenburg, the Second Reich; and the Nazi regime under Hitler, the Third Reich. The word occurs in many compounds; as, Reichstag, Reichsgericht, Reichsland, Reichstadt, Reichsbank, Reichsthaler, Reichsmark, Reichsbishop and Reichsfuehrer, signifying respectively German diet, supreme court, land, city, bank, dollar, mark, bishop and leader. The imperial parliament of the Austrian-Hungarian Empire was called the Reichsrath,

literally "council of the empire." *Reichstag*, the name of the German parliament, literally means "realm session" and refers to the old council called to discuss the welfare of the nation. Hitler styled himself *Führer and Reichskanzler*, "Leader and Chancellor of the Reich." Germans refer to France as *Frankreich*.

What is St. Swithin's Day?

According to an old popular belief, if it rains on July 15, feast day of St. Swithin, it will rain for forty succeeding days, and if it is fair on that day, it will be fair for forty succeeding days. An old English rhyme of unknown origin says:

St. Swithin's day, if thou dost rain,
For forty days it will remain;
St. Swithin's day, if thou be fair,
For forty days 'twill nae mair.

The proverbial saying was already familiar in Elizabethan times. In *Every Man Out of His Humour* (1599) Ben Jonson wrote: "O here, 'St. Swithin's, the 15 day, variable weather, for the most part rain,' good! 'for the most part rain.' Why, it should rain forty days after, now, more or less." But the belief is not alluded to in Shakespeare. In *Trivia* (1715) John Gay wrote:

Now if on Swithin's feast the welkin lours,
And every penthouse streams with hasty showers,
Twice twenty days shall clouds their fleeces drain
And wash the pavements with incessant rain.

Needless to say records do not bear out the adage and it is not taken seriously by scientific weather forecasters. Swithin (or *Swithun*) was ecclesiastical counselor to Egbert, king of the West Saxons, who appointed him bishop of Winchester in 852 A.D., and in that capacity he was tutor to the king's sons, Ethelwulf and the famous Alfred the Great. Bishop Swithin was noted for his humility and simple life and, according to the old chronicles, before he died on July 2, 862, he requested that he be buried in the churchyard outside the Winchester cathedral "in a vile and unworthy place" under the eaves, where passers-by might walk over his resting place and "the sweet rain of heaven might fall upon the grave." In 984, more than a century later, the monks decided the saintly bishop should be removed to a more worthy tomb, and accordingly on July 15 of that year the remains were transferred with great pomp to a shrine within the cathedral. Writers

of that time say miracles accompanied the removal of Bishop Swithin. A legend says that the belief that rain on St. Swithin's Day presages a continued rain of forty days arose from the fact that it rained on the day his body was moved and it continued to rain forty days without a break. The monks are said to have interpreted this as a sign that the saint disapproved of their project. The Winchester cathedral had been dedicated to St. Peter and St. Paul, but when it was restored in 984 St. Swithin was made its patron saint and he remained such until the shrine was destroyed and the relics scattered in 1539 by order of Henry VIII. Upon the restoration of the cathedral in 1593 under Elizabeth the shrine and remains of St. Swithin were transferred to the new building July 15, and that date, the original date of the first translation of St. Swithin, became the popular saint's feast day and is retained in the Catholic and Anglican church calendars. The shrine in the Winchester cathedral acquired a wide reputation for miraculous cures, and St. Swithin was regarded as the greatest healing saint in England. At first he was made a saint only by popular consent, but he was canonized by the pope about two centuries later. St. Swithin was probably not associated with the weather until Protestant times. Similar beliefs, associated with other days and saints, are found in France, Belgium, Germany and other countries.

What makes a ouija board work?

The ouija board was invented by Isaac Fuld and his brother William and was patented July 1, 1892, in the name of the Kenard Novelty Company of Baltimore, Maryland. In his application for a patent William Fuld declared: "A question is asked and by the involuntary muscular action of the players, or through some other agency, the frame will commence to move across the table." The ouija board swept the whole world in one of the most remarkable crazes on record, although it had been marketed by its manufacturers merely as an interesting toy without any claim that it had the mystic powers ascribed to it by many. *Ouija* (pronounced *WEE-jah*) was a coined term for trade-mark purposes, being a combination of *oui* and *ja*, the French and German words for "yes." Literally it means "yes-yes." The ouija board was really a modification of the planchette, which had a wide vogue about the time of the Civil War and was an instrument used in spiritistic and automatic writing. *Planchette* is the diminutive of Old French *planche* and literally means a little plank or board. A planchette consists of a small triangular piece of board mounted at the base on tiny casters and at the apex on a vertical pencil. When

the tips of the fingers are rested lightly on the planchette the pencil writes on a sheet of paper. Believers in the mystic powers of the planchette insist that the messages are written independently of the will of the operator. The ouija board consists of a movable pointer attached to a board on which the alphabet, numbers, the words "yes" and "no" and other signs are printed. Two persons, with the yes-yes device between them, face each other and place their hands on the board. Sometimes the pointer seems to move in response to the subconscious mind without the operator's being aware that his muscles have anything to do with it, and the resulting messages spelled out are often startling or amusing, although generally meaningless. A clever operator, by applying pressure on the board properly, can make the pointer indicate messages without any apparent effort on his part. Since ancient times magicians and mystics have pretended to forecast events by means of such devices, and credulous persons are often led to believe that the messages emanate from spirits or supernatural forces. Experts say the movements of the pointer on the ouija board are owing to the unconscious muscular actions of the operator. In 1919 the federal government ruled that the ouija board is taxable as a game, and this ruling was confirmed by the federal courts. William Fuld died in 1927 and Isaac Fuld in 1939. William Fuld, Jr., son of one of the co-inventors, continued to manufacture the "talking board" under the name, Mystifying Oracle.

What is a blue book?

In Great Britain a blue book is an official report or government document, particularly a publication printed by order of the crown or Parliament. This name arose from the fact that such publications at one time had blue covers or wrappers. Nowadays the so-called blue books are sometimes bound in drab colors or in white. Even unbound acts of Parliament, no matter how brief, come under the general designation of blue books. Generally speaking, however, *blue book* is applied to the more formal and elaborate reports or communiqués issued by the British government. Less extensive, occasional reports that are bound without covers are popularly called "white papers." Printing the proceedings of the House of Commons began in 1681 during the dispute over the question of excluding the Duke of York (later James II) from the succession to the throne. Parliamentary blue books were first officially sold to the public in 1836. White papers, as distinguished from blue books, are issued to meet some special and immediate situation and they are simply blue books from which the

cover has been omitted to save either time or expense. Many European governments have or did have distinctive colors for the covers of their official publications—gray books in Belgium, yellow books in France, green books in Italy, orange books in Russia, etc. In 1945 a committee of Jews announced its intention of publishing a “black book” containing evidence of German atrocities against the Jews in Europe. *Blue book* has several applications in the United States, but the term is not customarily applied to government bulletins, documents or reports. Official diplomatic correspondence published in the United States is generally bound in red. In Great Britain lists of persons in the government service, including their names, salaries and other information, are called “red books.” Formerly *blue book*, a term suggested by the British *red book* was popularly applied to the *Biennial Register*, a publication containing the names, places of residence, salaries and other information about persons employed by the federal government. From this usage any register or directory containing the names and addresses of persons socially prominent came to be called a blue book.

Why is the name of the Thames River pronounced *temz*?

The name of England's chief river, which rises in the Cotswold Hills and flows through London into the North Sea, has been pronounced *temz* since time immemorial. This pronunciation is a survival of a time when the name was spelled *Temze* and *Temse*. The *h* is not found in the word until 1377, and it was not regularly inserted until after about 1500. This same name transplanted in America is variously pronounced *temz*, *taymz* and *thaymes*. The original significance of *Thames* is lost in the obscurity of the past. In the vicinity of Oxford the Thames River is called the Isis, a fact that has given rise to a theory that is often repeated but apparently is without foundation. According to this theory, the Latin name of the stream was *Thamesis*, “Broad Isis,” *isis* being a mere variant of *esk*, *ouse*, *uisg*, etc., meaning “water.”

How did the wake originate?

A wake is a vigil with a corpse, the word being derived from Anglo-Saxon *waecan*, “watching.” Originally this particular kind of vigil was called a *liche-wake*, from *lic*, “corpse,” to distinguish it from the medieval English wake or revel held in country parishes to celebrate the anniversary of the church's dedication. These parish dedication wakes degenerated into little more than common fairs, with the people reveling and merchants hawking wares, and accordingly a statute

was enacted in the time of Edward I (1272-1307) forbidding such wakes in churchyards. The ancient *liche-wake* still survives to some extent. In many countries it is customary for relatives, friends and neighbors of the deceased to sit up nights with a corpse until after the funeral. Such wakes are very ancient and it is not known definitely whether they are of Christian or heathen origin. They may have originated in the ancient superstition that unless carefully guarded, a corpse was in danger of being carried away by evil spirits. On the other hand, the practice may be an outgrowth of the chanting of prayers by relays of monks or priests so that the corpse would never be left without prayer. Records show that at an early date wakes were subject to abuses and often turned into revelry, drinking and feasting. The Irish wake is especially notorious in literature. It is called *caoinan*, which literally means "wailing" rather than "watching." In some parts of the Emerald Isle, according to numerous writers, a wake used to be, and perhaps still is to a slight extent, a highly festive occasion. Those remaining up nights with a corpse sometimes spent the time in drinking, dancing and telling jokes and stories. Grace Greenwood (1823-1904), in *Stories of Travel*, wrote of the Irish wake: "A wake, sure it's an entertainment a man gives after he is dead, when his disconsolate friends all assemble at his house, to discuss his virtues and drink his poteen." *Poteen* (or *potheen*), from Irish *poitin*, "little pot," was whisky made in small quantities in home stills to avoid paying the duty.

What are meant by the keys and freedom of the city?

Frequently we read that a noted visitor has been presented with the keys of this or that city. This is merely a figurative way of saying he has been given an official welcome. The expression and the ceremony are survivals of medieval times when every important town in Europe was fortified with walls and people could enter or leave the inclosure of the city only through the gates, which were generally closed and locked between sundown and sunrise. The keys to the gates were kept by the mayor or military commander and when the city surrendered the keys were formally turned over to the victors. This ceremony suggested the common practice of presenting distinguished visitors with the keys of the city as a token of honor and esteem, just as a private person might give a friend the key to his house to express complete confidence in him. Figuratively speaking, the city is "surrendered" to the eminent person who honors it by his visit. Occasionally a modern city presents an actual key or set of keys to symbolize the ancient ceremony of presenting the keys of the city. In a similar manner when a dis-

tinguished person is officially welcomed to a city he is said to receive the freedom of the city. Nowadays conferring the freedom of the city, like presenting the keys of the city, amounts to little more than an expression of esteem, but during the Middle Ages in Europe the ceremony had a greater significance. *Freedom* was the name given to the privileges of certain cities, usually known as free cities, and by extension the term was applied to the municipal privileges of the citizens themselves. Hence the freedom of the city meant the privileges of citizenship. A citizen was called a freeman. In those days the ordinary person could become a freeman or citizen only by a long apprenticeship to a recognized guild. Occasionally, however, the customary requirements were dispensed with and a person of great wealth or renown was granted citizenship or the freedom of the city in recognition of his position or services to the community. His name was placed on the list of burghers or freemen and he was entitled to all the privileges of municipal citizenship, including those of voting and holding office. Considering the difficulties involved in becoming a citizen it was a substantial favor as well as a great honor to be granted the freedom of the city. Accordingly the phrase became associated in the popular mind with honor and esteem. Later honorary citizenship was sometimes conferred; that is, the freedom of the city, carrying only nominal privileges, was conferred on eminent nonresidents purely as a mark of honor. Many European cities still welcome distinguished persons by granting them the freedom of the city, and the documents presented are modeled after those employed on similar occasions during the Middle Ages. In America *freedom of the city*, like *keys of the city*, is merely a figurative expression and is seldom employed except in the sense of the scroll presented to a visitor of distinction when he is given an official welcome.

What is common sense?

Many people think it odd that one of the most uncommon things combination of general intelligence and sound judgment—should be called common sense. Historically the term is not hard to explain. From Aristotle's time until a few centuries ago it was believed that man had a common internal sense the function of which was to co-ordinate the impressions received by the five special senses—seeing, hearing, feeling, smelling and tasting—and to reduce them to the unity of common consciousness. In other words, the common sense was the bond connecting the other senses and was the balance wheel of the brain. A few quotations from early writers illustrate the old belief. In 1543 Bartholomew Traheron, in his translation of John da Vigo's

Chirurgerge, wrote: "They [the eyes] were ordayned of nature in the former part [of the head] . . . that they might carye visible things to ye commune sense." Lodowick Bryskett, writing in his *Civil Life* in 1606, said: "Which common sense, is a power or facultie of the sensitue soule . . . and is therefore called common, because it receiueth commonly the formes or images which the exteriour sense present vnto it, and hath power to distinguish the one from the other." Sometimes the five special senses were called the five wits. For instance, in Chaucer's *Parsons Tale* "the five wittes" are defined as "sight, hearing, smelling, savouring and touching." But more often the five wits were regarded as the faculties of common sense, imagination, fantasy, estimation and memory. In the *Anatomy of Melancholy* (1621) Robert Burton wrote: "Inner Senses are three in number, so called, because they be within the brain-pan, as Common Sense, Phantasie, Memory . . . This Common sense is the Judge or Moderator of the rest, by whom we discern all differences of objects." Thus a person with a good common sense was one whose faculties were all under control and therefore he was one with mental poise and good judgment. Persons without the due allotment of wits were said to lack a common sense. From this it was an easy step to *common sense* with the meaning of average capacity, general sagacity and good judgment. A person with common sense is one who has the ability to see the practical things of everyday life in their true light. *Horse sense* expresses the same idea even more pointedly. Shakespeare employed *common sense* with the meaning of "fellow feeling" or "common interest" when in *II King Henry IV* he puts the following words in the mouth of Lord Scroop, archbishop of York and leader of the rebellion against Henry Bolingbroke:

Good my Lord of Lancaster,
I am not here against your father's peace,
But, as I told my Lord of Westmoreland,
The time disorder'd doth, in common sense,
To hold our safety up.

Why are oysters of a certain kind called blue points?

Blue point oysters were originally so called from Blue Point, a village on Long Island near the eastern end of Great South Bay, in the vicinity of which deliciously flavored oysters of a small variety were found in natural beds. Nowadays any similar small round oysters suitable for being served raw are known as blue points. In a similar way Lynnhaven oysters received their name from Lynnhaven, a bay inside Cape Henry, Virginia. The English ships that carried the first colonists

to Jamestown entered this inlet April 26, 1607. George Percy, a member of the expedition and Captain John Smith's successor as governor of the Jamestown colony, wrote that in Lynnhaven "we got good store of Mussels and Oysters, which lay on the ground as thick as Stones; we opened some, and found in many of them Pearles." These oysters, Percy said, were "large and delicate in taste." Lynnhaven, however, was not christened until 1621, when "good Adam Thoroughgood" visited the inlet and named it Lynnhaven after Lynn, his home in England. Cove oysters were so called because medium-sized, well-shaped oysters of this type generally grow singly in coves. The name was originally applied to oysters found in coves on the west shore of Chesapeake Bay between Baltimore and the mouth of the Potomac River. These cove oysters were canned in Baltimore as early as 1820 and "cove oysters" became synonymous with "canned oysters." *Oyster* is derived through Latin and early French from Greek *osteon*, "bone" or "shell." Oysters are native to many parts of the world and about 190 different species are known to science. Some of these are native to only one comparatively small area. The three species of commercial value produced in the United States are commonly referred to as the eastern, the Olympia and the Japanese, the first being grown on the Atlantic coast and the other two on the Pacific coast.

How did *throwing up the sponge* originate?

This phrase, meaning to admit that one is beaten and to give up a struggle, comes from prize fighting. In the earlier days of professional pugilism each boxer was supported by a backer or second who held a sponge to freshen his fighter by rubbing his bruises between rounds. A backer gave notice of his man's defeat and willingness to acknowledge the fact by tossing his sponge into the center of the ring. The act was a signal of defeat just as throwing a hat or cap into the ring was a challenge to fight. When *throwing* or *chucking up the sponge* came into general use is not known. It was already defined in a *Slang Dictionary* published in 1860. *Tossing in the towel* is now used in the same sense.

How should a widow write her name?

There is no rule, as many people seem to think, that a widow's name should invariably consist of *Mrs.* followed by her Christian name and her husband's surname—Mrs. Mary Jones, for instance. According to a common notion, Mrs. John Jones becomes Mrs. Mary Jones when her husband dies. No such distinction is recognized by the most approved

usage. A widow continues to use the same name she used when her husband was alive. On social stationery and visiting cards the name of John Jones's wife or widow is written Mrs. John Jones. She herself would write her signature Mary Jones or (Mrs.) Mary Jones, but it would be improper for another to so address her socially. In legal and business matters she would be addressed as Mary Jones, that being her signature, and on business and professional stationery and cards she might use Mrs. Mary Jones. A divorced woman, if her maiden name is not restored, may continue to use her former husband's full name, or she may substitute her maiden surname for his Christian name. If Nellie Brown, for example, is married to John Jones and later divorced, she may use the name Mrs. John Jones on her social stationery and visiting cards, or she may prefer Mrs. Brown Jones. Her signature would be either Nellie Jones or Nellie Brown Jones.

Who were the troubadours?

The troubadours were a school of lyric poets who flourished in southern France, eastern Spain and northern Italy from the eleventh to the thirteenth century. Some authorities believe that the art of the troubadours was introduced into Europe from the Orient by way of North Africa and Spain. They lived chiefly in Provence and wrote and sang in *langue d'oc*. The troubadours evolved a kind of lyric poetry devoted almost entirely to romantic and amatory subjects. Its forms included sonnets, pastorals and chansons of high poetic skill. As a rule the meter and rhyme were very complicated. Frequently the troubadours attached themselves to the courts of kings and nobles whom they praised or censured in their songs. Again, they selected some lady distinguished for position and beauty and directed their lyrics to her. Occasionally a troubadour wrote a satire dealing with the conditions of society or the degeneracy of the clergy. But their chief subjects were chivalry, gallantry and love. Many of the troubadours became involved in the Albigensian troubles and had to migrate to Spain and Italy, where they had a decided influence on poetry during the thirteenth century. The names of some 400 troubadours living between 1090 and 1292 have been preserved. Even kings and princes occasionally became troubadours and Richard the Lionhearted, King Alfonso of Aragon, Bishop Folquet de Marseille of Toulouse were numbered among these highly polished and cultivated bards. *Troubadour* is derived from Provençal *troubar*, "to find" or "to invent," and it is supposed that these minstrels were so called because their songs were improvised to meet the demands of the occasion. Sometimes the troubadours became

wandering minstrels and were accompanied by jongleurs, whose function was to provide instrumental accompaniment to the songs the troubadours composed and sang. Six or seven different instruments were used by the troubadours and their jongleurs. Jacques Jasmin (1798-1864), Gascon poet, was known as "the last of the troubadours." A somewhat similar school of poets who flourished in northern France from the eleventh to the fourteenth century were known as *trouweres*. They wrote in *langue d'oïl* and their work was chiefly epic in character.

Does the Mississippi flow uphill?

The popular notion that the Mississippi River flows uphill is based on an inaccurate use of *uphill* and *downhill*. Owing to the centrifugal force generated by its rotation the earth bulges at the equator and is slightly flattened at the poles. The Mississippi flows from north to south. Making due allowance for the difference of elevation above sea level, and also taking into consideration the fact that the radii of the earth are materially shorter only near the poles, it is estimated that the mouth of the Mississippi is about four miles farther from the center of the earth than its source is. Water flowing from the source to the mouth moves about four miles farther from the center of the earth. Hence the stream is popularly said to flow uphill. This would be true if *uphill* and *downhill* referred to distance from the center of the earth; that is, if *up* meant away from the earth's center and *down* toward it. But average sea level, not the center of the earth, is used as the basis for computing depressions and elevations. Motion *up* and motion *down*, properly defined, respectively refer to movements against the attraction of gravity and those acting with it. The earth is not a perfect sphere and a point at sea level at the equator is about thirteen miles farther from the center of the earth than is a sea-level point at either of the poles. Surface measurements show the Mississippi's source to be several hundred feet above sea level, while its mouth, of course, is at sea level. Therefore the water in the river obeys the law of gravity and runs downhill; that is, from a greater surface elevation to a lesser.

What is an Admirable Crichton?

Any person of unusual or precocious attainments is called an Admirable Crichton (pronounced *KRY-tun*). This is the epithet of James Crichton (sometimes written *Creighton*), a Scottish intellectual prodigy, who was born in 1560 and who claimed royal descent from the Stuarts. He was also famous for his physical prowess and the beauty of his

person. At the age of fifteen he took the degree of Master of Arts, and before he was twenty he was said to have "run through the whole circle of sciences," mastered ten or twelve languages and perfected himself in all the knightly accomplishments. As the result of a quarrel with his father, who had become a Protestant, Crichton went to France. According to one story, he debated in twelve languages at Paris and won an easy victory over the entire faculty of the College of Navarre in the Sorbonne. After that he spent a year or two campaigning with the French army. Everywhere he went on the continent he became known for his beauty of person, his elegance of manner, his astounding memory and his intellectual accomplishments. He astonished the doge and senate at Venice with his eloquence and oratorical grace. At Mantua he was appointed tutor to Vincenzo di Gonzago, heir to the dukedom. Here he distinguished himself as a swordsman and killed many of the best swordsmen in Italy. His brilliance made other men envious, and Crichton is said to have supplanted the prince in the affection of his mistress. One evening, supposedly in 1582, he was attacked in the streets of Mantua by three masked men. The Admirable Crichton fought so well that the leader of the party was forced to unmask to save his life. It was Gonzago himself! The Scot fell on his knees and apologized to his pupil, at the same time handing him his sword. But the ungrateful prince immediately ran him through with it, and so died at twenty-two one of the most famous of all prodigies. The earliest known use of the epithet *The Admirable* is in John Johnston's *Heroes Scoti* (1603). In Edwin Morris Tennyson wrote:

I call'd him Crichton, for he seem'd
All-perfect, finish'd to the finger-nail.

Where was ancient Troy?

Troy was the capital of the Troad, or the land of ancient Troy, which was a district about forty miles in width and not much greater in length on the northwest promontory of Asia Minor, bordering on the Aegean Sea and lying between the Caicus River (*Bakir Chai*) on the south, the Aesopus River on the north and the Ida range of mountains on the east. This ancient city figures largely in the *Iliad* and to a lesser extent in the *Odyssey*, two epic poems traditionally supposed to have been written by Homer in the ninth century B.C. According to legend, the Greeks completely destroyed the city after a siege of ten years. About 160 A.D. Demetrius of Scepsis raised the question as to the exact site of Homer's Troy and the discussion led to a long-drawn-out academic dispute that was not finally settled until comparatively

recent times. No site in the Troad conforms entirely with all the topographical hints given in Homer, although the broader topography described in the great Greek epic poems is recognizable in the modern plain of the Menderes. Heinrich Schliemann, Wilhelm Dörpfeld and other archaeologists proved beyond a reasonable doubt in the latter part of the nineteenth century and the early part of the twentieth that Homer's Troy was situated on the low mound of Hissarlik ("place of fortresses" in Turkish) on the Trojan plain only a few miles from the point where the Hellespont (Dardanelles) unites with the Aegean. This mound, which excavations show was the site of Troy (Greek Ilium), lies in the fork of the Menderes River, whose old bed was the ancient Scamander, and the Dombrek Su, the ancient Simoïs, which is its last tributary from the east. The Menderes, which should not be confused with the larger stream to the south with the same name, has its springs in Mount Ida and flows sixty miles to its outlet in the Dardanelles. Schliemann's excavations, made between 1871 and 1882, indicated that nine different towns or cities had stood on the mound of Hissarlik. The first probably dated back to about 3000 B.C. Dörpfeld's excavations, made between 1891 and 1894, indicated that Homer's Troy, which is supposed to have been destroyed by the Greeks about 1200 B.C., was the sixth city to stand on the site. The ninth and last city on the site flourished in Roman times. Troas, where St. Paul heard the Macedonian cry in a vision, according to Acts 16, is supposed to have stood in the vicinity of the ruins of ancient Troy.

Is *guinea* the name of an English coin?

In British monetary usage the pound sterling of twenty shillings is the unit of valuation and accounting. The guinea is a sum of money equal to twenty-one shillings—one shilling more than a pound. The guinea received its name from the fact that a coin struck off in 1663 during the reign of Charles II was called a guinea because it was made of gold imported from the Guinea coast of West Africa by a mercantile company operating under a royal charter. The original guinea gold piece was valued at twenty shilling (one pound) and was subsidiary to the standard silver coinage, but the silver coins depreciated to such an extent that the guineas increased in value in relation to silver until in 1694 a guinea was worth thirty shillings or a pound and a half in silver. During the reign of William of Orange the silver coinage was rehabilitated and the value of the guinea was gradually reduced until it was worth twenty-one and a half shillings in 1698. In 1717 the value of the guinea was fixed at twenty-one shillings. The guinea continued to be

coined until 1813; in 1817 it was superseded by the sovereign, which represents exactly a pound of twenty shillings. The pound as such is merely a unit of valuation and accounting and is not coined. The twenty-shilling gold piece is always referred to as a sovereign rather than as a pound. On the other hand, there are no paper guineas. Although the coin known as a guinea has not been issued since 1813 and has been out of circulation since about 1820, the guinea still survives as a sort of "gentleman's pound" of twenty-one shillings. Professional men in Britain are still fond of reckoning fees in terms of guineas instead of sovereigns or pounds because it affords a painless method of extracting additional shillings from the pockets of their clients.

What is the Giant's Causeway?

The Giant's Causeway is a remarkable formation of basaltic rocks in County Antrim on the northeast coast of Ireland. These rocks project from sheer cliffs into the North Channel near Bengore Head, some seven or eight miles from Portrush. They received their name from a legend that they were once part of a "walk" or bridge built by giants on which to pass between Ireland and Scotland. The interesting formation, according to geologists, seems to have some natural connection with the basaltic formations on Staffa Island near the coast of Scotland. Apparently it is the result of an upheaval of basalt during the Tertiary period. Some authorities have suggested that the Giant's Causeway was caused by the cracking of a lava flow. Ages of erosion have left a line of perpendicular cliffs five hundred feet in height. Sometimes *Giant's Causeway* is applied to the entire range of cliffs along the coast at that point. Strictly speaking, however, the Giant's Causeway is only the peninsularlike platform of basalt columns extending from the sheer cliffs into the sea. It is divided across its breadth by basalt dikes into three groups of columns, known respectively as the Little Causeway, the Middle (or Honeycomb) Causeway and the Grand Causeway. The individual columns are cut as if by mathematical calculation and it is hard for the average observer to realize that they were not carved by human hands. Within an area of several hundred square yards there are some 40,000 vertical columns of basalt ranging in diameter from fifteen to thirty inches. Some of the columns are thirty-six feet high. They gradually decrease in height until the causeway is lost below the low-water mark. Most of the pillars, which form an uneven pavement extending three hundred feet out into the water, are six sided, although some of them have five, seven, eight and even nine regularly formed sides. A hexagon contains the greatest number

of sides that will fit together without leaving irregular spaces. In many cases these six-sided prisms are fitted together so snugly that even water cannot penetrate between adjoining columns.

What is pigeon's milk?

Pigeon's milk is the name given to a milky secretion ejected from the crops of both male and female doves and pigeons and fed to their young during the early stages. Pigeon's milk is not composed of food that has been partly digested and then regurgitated as often supposed, although it may serve to moisten such food. Certain cells in the double walls of the crop undergo a cheeselike degeneration and this substance when mixed with mucus and perhaps another juice makes up the white fluid fed to the young. The odd thing about it is that both sexes furnish this "milk." If the young die or are removed during this period both parents suffer severely and are liable to die from the turgid congestion of the excessively developed walls of the crop. This method of feeding the young is not peculiar to the pigeon kind. Some of the petrels and certain other birds also feed their young by thrusting the beak down their mouths and injecting into them a fluid from the crop. In *As You Like It*, Act I, Scene 2, Shakespeare refers to pigeons feeding their young:

CELIA: Here comes Le Beau

ROSALIND: With his mouth full of news.

CELIA: Which he will put on us, as pigeons
feed their young.

ROSALINE: Then shall we be news-crammed.

Figuratively *pigeon's milk* is applied to something that does not exist, such as an imaginary article for which a novice is sent on a fool's errand.

Why do men lift their hats to women?

It is believed that the custom of uncovering the head as a mode of salutation originated in the military practices of the ancients. In the days when soldiers wore heavy armor a man would take off his helmet or headgear to show that he was not afraid to stand with head uncovered and unprotected in the presence of another. It was an act expressive of confidence. Some authorities suppose that this custom did not originate until the days of chivalry and knighthood during the Middle Ages, but there is evidence that it was common among the Greeks, Romans and certain other ancient peoples. At any rate, it is

believed that later it became customary to remove the headgear to show deference to a superior or as a mark of respect to a person of distinction. It was only a step farther to lift the headdress as an act of politeness or gallantry to ladies. After the introduction of men's hats a few centuries ago, raising the hat or completely removing it became a general method of greeting women. The practice retains some of its earlier significance, and many men still take off their hats to salute distinguished persons of either sex. Respect for the national flag is shown in the same manner. Orthodox Quakers do not believe in raising the hat as a greeting or mark of respect. George Fox, founder of the Society of Friends, taught that a Christian should submit to persecution and even face death itself rather than touch his hat to the greatest of mankind, whether male or female. When asked to produce scriptural authority for his dogma on this subject, Fox cited the Biblical passage (Daniel 3:21) in which it is stated that Shadrach, Meshach and Abednego were thrown into the fiery furnace with their hats on. The Quaker leader also pointed out that the Moslem Turks never showed their bare heads to their superiors and said that they should not be permitted to surpass Christians in virtue. In 1670 William Penn was fined for not removing his hat in court and was imprisoned for refusing to pay the fine.

How did *dunce* originate?

Dunce, meaning "a stupid person," is derived from the middle name of John Duns Scotus, a celebrated scholastic theologian and perhaps the greatest of all the British medieval philosophers. He was born in Scotland about 1265 in the village of Duns, from which he took one of his names, and he died at Cologne, Germany, in 1308. "The Subtle Doctor," as he was nicknamed, was a prolific writer and his works on theology, philosophy and logic were used as textbooks in many universities. His followers, generally known as Scotists, were a predominant sect at Oxford and elsewhere until the sixteenth century, when they were attacked with ridicule, first by the humanists, and then by the reformers, as subtle sophists who quibbled over words and definitions because they were unable to refute arguments. The system of the Scotists, according to charges made by the humanists and reformers, was a mixture of needless entities and useless distinctions. In turn the Dunsmen, as the Scotists were contemptuously called by their enemies, railed against the "new learning." *Duns*, which became corrupted into *Dunce*, became synonymous with "caviling sophists" or "hairsplitter." Gradually the term acquired the meaning of a dull, stupid or obstinate

person or one impervious to new ideas. As early as 1531 William Tyn-dale wrote: "Remember ye now how . . . the old barkyng cures, Dunces disciples and lyke draffe called Scotistes, the children of dark-nesse, raged in euery pulpit agaynst Greke, Latin and Hebrue." Although Duns Scotus was made to stand as the prototype of all dunces, the general verdict of history is that he was a man of broad learning and sound thinking.

What birds drink by holding their heads in the water?

Pigeons and doves are the only birds that drink by suction; they place their bills in the water up to their nostrils and keep them immersed while drinking, all the time drawing in and swallowing a continuous stream just as a horse does. Virtually all other birds dip their bills in the water and then raise their heads up and throw them back to swallow. The hummingbirds apparently imbibe liquids by means of their rapidly moving tongues and do not drink in a continuous draft by suction.

Why are Italians called wops?

Wop, like *dago*, is a derogatory and contemptuous slang name often applied in America to the lower class of immigrants from middle and southern Europe, particularly from Italy. The appellation is keenly resented by those to whom it is applied and many efforts have been made to discourage its use. It is of unknown derivation. The earliest use of it recorded by the Oxford dictionary is dated 1916, although it is believed to be considerably older than that. "It is a vulgarism of the streets which probably originated in the underworld," wrote the late Dr. Frank H. Vizetelly in a letter to the author dated July 2, 1924. *Webster's International Dictionary* defines *wop* as "an Italian; a dago; sometimes any unskilled laborer, or the like, of foreign extraction and dark complexion," and derives it from the Sicilian and Neopolitan dialect *guappe*, which in turn is from Spanish *guapo*, meaning bold, handsome, a bully, a dandy. *Wop* may very well have been borrowed from the Italian immigrants themselves. It is often stated that the slang word is a shortened and corrupted form of *wapparousa* (or *vapparousa*, since *w* does not occur in Italian except in foreign words), supposedly a Sicilian dialectical or colloquial term meaning "a good-for-nothing fellow." If true, this may account for the origin of the disagreeable and stinging connotation of *wop* as interpreted by the Italians themselves. But this writer has been unable to find any positive evidence that such a word exists in the Sicilian dialect. There is,

however, a Sicilian word *vappu*, signifying a bully or braggart, and according to Gaetano Ceraso's *Vocabulario Napoletano Italiano*, published in 1910, the term has a similar meaning in the Neapolitan dialect. In 1930 Dino Bigongiari of the Department of Italian at Columbia University thought that possibly *wop* might be derived from *vappu*, which, he said, has acquired a more recent meaning, namely, "a member of the underworld who is not yet fully trained, a sort of green thug." Perhaps the term goes back to Latin *vappa*, which was used figuratively in the sense of "worthless fellow."

What is the origin of *Niagara*?

This term was applied to the Niagara River before it was to the famous falls. According to the Bureau of American Ethnology, the most probable derivation of *Niagara* is from an Iroquoian sentence-word signifying "bisected bottom-land." It appears that the Iroquois, Neuter and kindred Indians applied the original term to a village that stood on the site of Youngstown, New York. The earliest known record of the word occurs in the *Jesuit Relation* of 1640, where it is spelled *Onguiaahra*, probably a misspelling of *Ongniaahra*. In 1642 Father d'Allement refers to the Neuter nation itself as *Onguiaahra*. On Sanson's map of 1657 the terms occurs as *Ongiara*. By 1660 the French were referring to the falls as the *Ongiara catarractes*. One historian found thirty-nine distinct forms of the name in early documents. The first written description of Niagara Falls of which there is record is that of Father Louis Hennepin, Belgian-born Franciscan friar and explorer, who was a member of the La Salle expedition of 1678. In his *Nouvelle Découverte*, written in 1697, Father Hennepin used the word in its present form. Of the falls he wrote: "Between the lakes of Ontario and Erie, there is a vast and prodigious cadence of water that falls down after a surprising and astonishing manner, so much so that the universe does not afford its parallel." The French pronounced the word in four syllables—*Nee-ah-gah-rah*. It is often said that *Niagara* is an Indian word meaning "thundering waters," but this picturesque derivation is pure fiction.

How did *Jack Robinson* originate?

Before you can say Jack Robinson, meaning "instantly," "at once," "in a twinkling," is of obscure origin. The earliest known reference to the expression occurs in *Evelina*, published in 1778 by Fanny Burney, who wrote: "I'd do it as soon as say Jack Robinson." In 1785 Francis Grose, the British antiquarian, published his *Classical Dictionary of*

the Vulgar Tongue. Under *Jack Robinson* the compiler wrote: "Before one could say Jack Robinson, a saying to express a very short time, originating from a very volatile gentleman of that appellation who would call on his neighbours, and be gone before his name could be announced." This improbable story smacks much of the type of etymology that derives *apothecary* from "a pot he carries." James Orchard Halliwell, in his *Dictionary of Archaic and Provincial Words* published in 1846, repeats what Grose said about *Jack Robinson*, but adds: "The following lines 'from an old play' are elsewhere given as the original phrase:

A warke it ys easie to be done
As tys to saye, Jacke! robes on."

The second line, it is supposed, means "As 'tis to say, Jack! robes on." Although many authorities regard the popular saying as a corruption of this old verse, the "old play" has never been identified. John Bartlett in his *Familiar Quotations* asserted that the current expression is said to be derived from a humorous song written by a London tobacconist named Hudson who lived in Shoe Lane during the early part of the nineteenth century. Hudson, said Bartlett, was a professional song-writer and vocalist and used to be engaged to sing at supper rooms and theatrical houses. This theory is disproved, however, by the simple fact that *before you can say Jack Robinson* was proverbial long before the period when Hudson is supposed to have lived. The story that attributes the origin of the saying to Richard Brinsley Sheridan during his parliamentary career is open to the same objection.

How does wood alcohol differ from denatured alcohol?

The common names for alcohol in its various forms are confusing. Pure alcohol— C_2H_5OH —is properly called ethyl alcohol or ethanol. Such alcohol acquired the name grain alcohol because formerly it was made largely by fermenting grain; later it was made chiefly from blackstrap molasses. So-called wood alcohol— CH_3OH —is of a different chemical composition and is properly called methyl alcohol or methanol. It received its common name because it is obtained principally by distilling wood. Wood alcohol has some of the properties of ordinary ethyl alcohol, but unless purified it has a foul odor, and when drunk it may cause not only intoxication but also blindness, vertigo, coma or even death. To denature means to "change the nature of." Denatured alcohol is ethyl or pure alcohol that has been treated to make it unfit for bodily consumption without impairing its indus-

trial qualities. Sometimes wood alcohol or methanol is put in ethyl alcohol to denature it and for that reason any denatured alcohol is often incorrectly called wood alcohol. *Alcohol* is derived through Medieval Latin from Arabic *al-koh'l*, the name that the Arabs gave to a fine metallic powder, such as powdered antimony, that they used to stain the eyelids. "Paintedst thy eyes" in Ezekiel 23:40 is believed to refer to this practice. In Europe the Arabic term was picked up and applied to highly rectified spirits, a significance it never had among the Arabs. In Spanish one of the meanings of *alcohol* is still "a cosmetic for staining the eyelids." The earliest recorded use of *alcohol* in English is dated 1543.

What is the king of England's surname?

Members of royal families do not have surnames in the sense that commoners do, but the family name of the British sovereigns has been Windsor since 1917 and that may be regarded as their surname. When Edward VIII abdicated in 1936 he was created Duke of Windsor. After that his personal name, the one he used in signing legal documents, became Edward Albert Christian George Andrew Patrick David Windsor. Queen Anne, who died in 1714, was the last sovereign of the house of Stuart. She was succeeded on the throne by George Louis, Elector of Hanover, who assumed the name George I. After that the British sovereigns belonged to the house of Hanover. Succeeding sovereigns had the dual status of elector of Hanover and king of England. In 1814 the Congress of Vienna raised Hanover to the rank of a kingdom with the result that George III, George IV and William IV were kings of both England and Hanover. But in 1837 when Victoria became queen of England, Ernest Augustus, Duke of Cumberland, the nearest male heir, succeeded to the throne of Hanover because under the Salic law a woman could not inherit in that German kingdom. That ended all connection between the two countries, but the family name of the British royal family continued to be Hanover. After Edward VII ascended the throne in 1901 the royal family of Great Britain was known as the family and house of Saxe-Coburg and Gotha. During the First World War there was strong sentiment in Great Britain against German names and titles. On July 17, 1917, King George V issued a proclamation abolishing German titles and dignities and declaring that henceforth the royal family and house "shall be styled and known as the house and family of Windsor." The dukes of Edinburgh and of Albany had been German princes as well as British peers. Parliament abolished these titles and

severed all connection with Germany. The British royal family took the name Windsor from Windsor Castle, the site of a royal residence on the upper Thames since the time of Edward the Confessor. The original form of the name was *Wyndeshour*, "winding shore." Edward III (1312-1377) was born there and was known as "Edward of Windsor." Long before the royal family adopted the name there were Windsor neckties, soaps, chairs, ferns, colors and other things. One of Shakespeare's comedies was entitled *The Merry Wives of Windsor* because the scene is laid in Windsor near Windsor Castle. It is often said that the family name of the present reigning family of Great Britain is *Wettin* or *Guelph*, but neither of these has ever been recognized by the British government as the official name of the royal family, house or dynasty. The Guelph (wolf) family is very old, and the Wettin line can be traced back to the twelfth century. Queen Victoria was descended from the Guelphs, and her prince consort, Albert of Saxe-Coburg and Gotha, was a descendant of both the Guelphs and the Wettins. Consequently through King Edward VII the present royal family has both Guelph and Wettin blood.

What does *twice weekly* mean?

The adverb *weekly* means "once a week." Therefore, strictly speaking, *twice weekly* is a contradictory phrase and cannot be correct, for it would literally mean "twice once a week." The same can be said of *twice monthly* and similar phrases. But these terms are used so widely that they may be said to have been sanctioned by usage. In all such cases the thought is more precisely expressed by *twice a week*, *twice a month*, *twice a year*, etc., or by *half-weekly*, *half-monthly*, *half-yearly*, etc. On May 15, 1791, Thomas Jefferson wrote to James Madison that "we have been trying to get another weekly or half weekly paper set up. . . ." *Semiweekly*, *semimonthly*, *semiyearly*, etc., are also often heard in the United States, though seldom in England. Latin *semi*, like Greek *hemi*, denotes "half." *Biweekly* and *bimonthly*, often applied to periodicals, present a greater difficulty. The former is used in connection with publications in such a manner that sometimes it is hard to determine whether it means "twice a week" or "once in two weeks." Most dictionaries recognize both definitions. The prefix *bi* is a shortened form of Latin *bis*, "twice." The original meaning of *biweekly* was occurring or appearing every two weeks or fortnightly; but it has been used so widely to mean semiweekly or twice a week that it is now hardly a safe word to apply to a periodical if one desires to be understood. Likewise *bimonthly* may mean twice a month

or once in two months, and *biannually* may mean twice a year or once in two years. These are cases in which, through ignorance of their exact significance, words have acquired erroneous and contradictory meanings, resulting in so much confusion that the usefulness of the terms is virtually destroyed for the present. *Biennial*, meaning once every two years or lasting two years, is closely related to *biannual* in origin. The ultimate origin of both is Latin *bis*, "twice," and *annus*, "year." Centuries ago a plant now called a biennial would have been called a *bisannual*. F. W. Fowler, in *A Dictionary of Modern English Usage*, brands as "unsightly hybrids" and "ambiguous" all words formed by prefixing *bi* to English words of time, such as *bihourly*, *biweekly*, *bimonthly*, *biquarterly* and *biyearly*.

Did the Japanese employ only Chinese bank clerks?

There is a popular notion that the Japanese are so dishonest that they cannot trust one another and therefore employ Chinese clerks in their banks. Before the Second World War a group of Americans seldom discussed the relative qualities of these two Oriental peoples that somebody did not bring up this charge against the Japanese. Of course it is without foundation. No great percentage of bank clerks in Japan are or ever have been Chinese. The number of Chinese in Japan is relatively small. According to a census taken in 1925 it was only 22,741. When Chinese were employed as bank clerks in Japan it was because they afforded cheap and efficient clerical help. The notion that Chinese are honest and Japanese dishonest has undoubtedly been promoted by persons who resent the aggressive attitude of the latter people. As a rule Japanese businessmen are more alert, energetic and quicker to adopt improved methods than their Chinese cousins are; but they probably are not less honest as a people. In fact bribery in the military service, corruption in public office and trickery in private business have always been tolerated to a much greater extent in China than in Japan. Bribery is sometimes referred to as the "silver key," *silver* in this connection signifying "money," and in China the bribing of military men, a common practice, is known as "the war of silver bullets." A Russian proverb says, "There are two kinds of Chinese—those who give and those who takes bribes," a cynical saying probably as unfounded as the one that Japanese are dishonest. In his speech on conciliation with America, delivered in the House of Commons March 22, 1775, Edmund Burke said: "I do not know the method of drawing up an indictment against an whole people." The myth that the Chinese are an exceptionally honest

people probably arose from the circumstances in the early history of American commerce with China. At first Americans were permitted to trade in China only with the port of Canton, which was controlled by thirteen merchants appointed by the emperor. These merchants made a favorable impression on the Yankee traders by their probity, fairness and straightforward methods of dealing, and from this germ grew the common notion that Chinese are more honest than other Oriental peoples. "A Chinaman's word is his bond" became an American proverb. Later, when Japan began to play a part in world commerce, the supposed exceptional honesty of the Chinese was emphasized at the expense of the Japanese.

Where are Panama hats made?

Panama hats are not made in Panama, as the name suggests, but in Ecuador, where their manufacture is a major industry. They were originally so called because Panama was the chief center of their distribution to the world. *Panama* was applied to this type of hat by the forty-niners who crossed the Isthmus of Panama to and from the California gold fields. These hats, which are not straw hats in the strict sense of the term, are plaited from *toquilla*, a flexible and durable fiber derived from the young leaves of a palmlike plant (*Carludovica palmata*), which is a stemless screw pine that grows wild in South and Central America, particularly in Ecuador. *Toquilla* is the Spanish diminutive of *toque* or *toca*, "headdress." The plant as well as "toquilla straw" is also known as *jipijapa*, from the name of one of the Ecuadorean towns where these hats are made. Toquilla hats, variously called *jipijapa*, *montecristi* and *cuencas* after places where they are produced, have been made in Ecuador for centuries. Monte Cristi is called the hat capital of Ecuador. Making Panama hats is generally a home industry, often the side line of farmers. The fine toquilla or jipijapa leaves are plucked somewhat green, carefully sorted, split, boiled and sun-bleached. Indian women and children do most of the actual weaving, which is a tedious and delicate task that may take from one to several weeks on a single hat. The weaving is not done under water, as commonly believed, but both the fiber and the fingers must be kept moist during the process, and for that reason the work is done chiefly at night or in the early morning. The quality of Panamas is judged in part by the number of rings in the crown, twenty making a fine hat. Ecuadorean hatmakers claim a perfect Panama can be drawn through an ordinary finger ring without damaging it. Such hats sell at from \$5 to \$1,500 apiece. Although Ecuador, the original

home and still the chief producer, tried to keep a monopoly on Panama hats for its own people by putting heavy export duties on toquilla straw, such hats are now produced commercially in Peru and Colombia. In 1932 an Ecuadorean started a Panama hat factory in Panama, the country from which the hats take their popular name, but seven years later only 89 of the 766,000 Panama hats imported into the United States were made in Panama. The Federal Trade Commission announced in 1939 that an American manufacturer had agreed to discontinue the use of *Panama* to represent a product not made from jipijapa leaves or manufactured according to the process used in making genuine Panama hats. "Palm hats" of other types are made in many parts of Central and South America.

How many violins did Stradivarius make?

Estimates of the number of violins made by Stradivarius range from 1,000 to 3,000. In 1947 experts reported that there were at least 325 Stradivarius violins in existence—185 in the United States and 140 in the rest of the world. The signature of Stradivarius has often been forged. A layman cannot distinguish a genuine Stradivarius instrument from a good imitation and even experts are sometimes deceived. There are frequent reports of old and supposedly worthless violins that have been in the same family for years and that turn out to be "genuine Strads," possibly worth small fortunes. Unfortunately for the owners or finders, closer examination by experts generally reveals such reports to be incorrect. The world has been flooded with fake violins attributed to the workmanship of Stradivarius and labeled *Antonius Stradivarius Cremona Faciebat Anno 1716* or some similar inscription. Dealers are continually taking the joy out of life by informing jubilant possessors of "genuine Strads" that their instruments are fakes and worth only a few dollars. Little is known of the life of this famous musical-instrument maker, who was born in 1644 and died in 1737 at the age of ninety-three. *Antonius Stradivarius* is the Latin and *Antonio Stradivari* the Italian form of his name. Although he brought the violin to such a degree of perfection that it has been impossible to improve it materially, there were great violinmakers before him. Hindu authorities suppose the progenitor of the violin and the whole viol class of instruments was the *ravanastron*, a two-stringed instrument played with a bow, traditionally said to have been invented about 5,000 years ago by King Ravana of Ceylon. Sanskrit scholars say names for "fiddle bow" occur in Hindu writings dating back at least 1,500 years. Wandering minstrels in India still use a two-stringed

violinlike instrument called *rebec*. A similar instrument called *crwth* is said to have been used in Wales as early as the sixth century A.D., although some authorities say there is no reliable evidence of the use of a bow in western Europe before the ninth century. In England the *crwth*, whatever it was, was called *fythele*, whence "fiddle." *Violin* means "little viol" and was so called because it was smaller than the viol. The violin became popular in Italy and was brought to its present form by a Lombard instrument maker named Gasparo da Salo, who worked at Brescia between 1550 and 1610 and who developed several instruments for church use. *Cremona* is applied to violins made at Cremona by the Amatis Joseph Guarneri del Gesu, Stradivarius and others. Among these Guarneri ranked second only to Stradivarius, who began to put his own label on violins in 1666 while still a pupil of Nicolò Amati, his first inscription being *Antonius Stradivarius, Cremonensis Alumnus Nicholai Amati Faciebat Anno 1666*. It is said that it took Stradivarius three years to complete his first violin but that in later years he could make one in a week or two. He also made violas, cellos and guitars, some of which are still in existence. For his violins he received the equivalent of from \$30 to \$75 and twice that for his cellos. Today the value of Stradivarius violins ranges from \$5,000 to \$100,000, depending on the condition and pedigree of the particular instrument. Stradivarius had eleven children and was succeeded in the business by two sons, Francesco and Omobono, neither of whom achieved great fame in their own right. A violin contains about seventy separate pieces of wood. Stradivarius generally used maple or plane wood backs, sides and heads, and pine or spruce bellies. Some parts were made of poplar, sycamore and ebony or rosewood. It used to be supposed that the peculiar quality of Stradivarius violins was due to a secret varnish with which the maker coated them and that knowledge of the formula for making this varnish died with him, but duplication of the Stradivarius varnish in recent times has dissipated this belief. Good violins, it appears, acquire no additional quality of tone from the varnish. Some experts believe that the evaporation of the varnish on Stradivarius violins with the passing centuries improved their quality. Although age itself does not necessarily improve violins, apparently the wood in some violins does become more mellow and sensitive to vibration with use and age. Extreme cold or heat may cause a violin to crack, and experts say that valuable violins should be played occasionally. Cremona continued to be the most important violinmaking center until the early part of the nineteenth century, and Cremonas are the wonder and admiration of music

lovers the world over. The violin is considered the most important instrument in an orchestra. Music critics are generally agreed that this instrument produces the most beautiful of all music. More notes can be produced on the four strings of a violin than on the eighty-eight keys of a piano. Rattlesnake rattles are sometimes put inside a violin to "improve its tone." Another odd belief is that these rattles will make the user of the violin blind. Hairs from the tails and manes of horses are used in making bow strings because each hair has numerous tiny bristles that set the string in vibration to produce tone. A bow contains from 175 to 250 horsehairs laid side by side with half of them pointing in one and half in the opposite direction. François Tourts (1737-1835), a French bowmaker who was born the year Stradivarius died, is known as the "Stradivarius of the Bow," and his bows, like the violins of Stradivarius, are prized above those of all others. The nut at the end of a violin bow probably came to be called a "frog" as the result of a pun or an error. German *Frosch* may mean either "frog" or "nut."

What is meant by the bed of Procrustes?

A person is placed on the bed of Procrustes or given the Procrustean treatment when he is compelled to conform to a situation by arbitrary or harsh methods. Procrustes (pronounced *pro-KRUSS-tees*), according to Greek mythology, was a notorious robber and highwayman of Attica, who adopted the cruel practice of tying his victims on an iron bed, cutting off the legs if the person was too long, or stretching the body to the required length if it was too short. The fiend was finally slain by Theseus, who was the son of King Aegeus of Athens and who afterward conquered the Amazons and married their queen. Some versions of the legend say that Theseus treated Procrustes as he had treated his victims and made him fit his bed. *Procrustes* appears to be from a Greek verb signifying "to beat out" or "to stretch." In the Talmud the rabbis relate a similar method of torture employed by the inhabitants of Sodom on strangers who sought lodging in the city.

How did *meander* originate?

Meander, meaning "winding," "sinuous" or "crooked," is derived from the ancient name of a river in Phrygia. This stream, which is proverbial for its winding and tortuous channel, is now known as the Menderes, but not to be confused with another river farther north (the ancient Scamander), which is only sixty miles long and flows from Mount Ida to the Dardanelles. The Menderes (the ancient Meander) that is noted for its bends is 260 miles long and flows into

the Aegean Sea opposite the island of Samos off the coast of Asia Minor. *Meander* has been used in English at least since the sixteenth century. In Shakespeare's *The Tempest* the honest old counselor Gonzalo, whose bones are beginning to ache, says: "Here's a maze trod indeed, through forth-rights, and meanders!" "We speak of meandering streams," says Mark Twain in *Innocents Abroad*, "and find new interest in a common word when we discover that the crooked river Meander, in yonder valley, gave it to our dictionary." On the assumption that he was a native of Asia Minor, Homer is sometimes referred to as "the Swan of the Meander."

Who discovered the circulation of the blood?

William Harvey did not discover that the blood circulates. That the blood moves through definite channels in the body was known in ancient times. Aristotle held that the blood, after being manufactured from food in the liver, first went to the heart and then traveled to different parts of the body through the veins. Erasistratus, an eminent Greek anatomist who flourished at Alexandria about a century after Aristotle, taught that the arteries carried a subtle kind of airlike fluid known as "vital spirits," the escape of which permitted the blood to flow into the veins. Claudius Galen, a Greek physician and medical writer who lived in the second century A.D., had a fairly clear understanding of the valves of the heart and some knowledge of the movement of the blood. He advanced the theory that there were two kinds of blood, red and blue, and that each kind pulsed backward and forward through the body. His conclusion was that the arteries (the term literally means "air pipes") conveyed red blood as well as the vital fluid or blue blood. Although Leonardo da Vinci came close to anticipating Harvey in his theory of the circulation of the blood, Galen's theory, with modifications from time to time, prevailed until toward the close of the sixteenth century, when several able Italian thinkers turned their attention to the subject. Andreas Caesalpinus (1519-1603), an eminent botanist and physician, is often credited with having closely approached the true theory of the circulation of the blood. Hieronymus Ab Aquapendente Fabricius (1537-1619), who taught anatomy and surgery at the University of Padua, devoted considerable attention to the effect of ligatures and the mechanism of the valves in the veins. To William Harvey (1578-1657), a distinguished English physician who studied under Fabricius and who graduated from the University of Padua in 1602, belongs the full credit for discovering that the blood perpetually circulates in a complete circle and

through clearly defined channels and that its motion is produced by the action of the heart. From these facts it will be seen that it is not true, as so often stated, that before the time of Harvey the world believed "in the stagnation of the blood." Generations earlier most physicians had discarded the theory of stagnation and believed that the blood moved in the body, but they had little conception of circulation in the sense of a continuous stream returning to a single source. A few quotations from Shakespeare will give a fairly good idea of what the popular notion of the movements of the blood was before the time of Harvey. In *Julius Caesar* Brutus tells Portia that she is "as dear to me as are the ruddy drops that visit my sad heart," and in *II Henry IV* Falstaff says that sherry warms the blood and "makes it course from the inwards to the parts extreme." The Ghost in *Hamlet* told the Prince of Denmark that the effect of the "leperous distilment" "holds such an enmity with blood of man, that, swift as quicksilver, it courses through the natural gates and alleys of the body; and with a sudden vigour it doth posset, and curd, like eager droppings into milk, the thick and wholesome blood." In *Coriolanus* Menenius Agrippa tells a tale in which the belly says to the other members of the body that it sends the general food "through the rivers of your blood, even to the court, the heart, the senate, brain." Queen Anne, *Richard III*, says to the king: "For 'tis thy presence that exhales this blood from cold and empty veins, where no blood dwells," and in the same play Richard himself uses the following metaphor: "The tide of blood in me hath proudly flowed in vanity till now; now doth it turn and ebb back to the sea, where it shall mingle with the state of floods, and flow henceforth in formal majesty." In *King Henry V* the Bishop of Ely tells the young king that the blood and courage of his renowned ancestors "runs in your veins." Similar quotations from other Elizabethan writers could be adduced to show that the stagnation theory had been abandoned at that period. In 1616, the year Shakespeare died, Harvey delivered a series of lectures before the College of Physicians in London in which he is supposed to have made his first public statement on the subject. Twelve years later, in 1628, he published in Latin at Frankfurt in Germany a fifty-two-page book entitled *Exercitatio anatomica de motu cordis et sanguinis* and setting forth in detail his theory of the movements of the heart and the circulation of the blood. Strictly speaking, Harvey did not discover that the blood circulates; rather he was the first to account for its circulation and to trace and describe its exact route. Before arriving at his conclusions he not only made a thorough study of all the available Italian literature on the

subject but experimented for many years with animals in laboratories and patients in hospitals. By placing ligatures on arteries he found that they became distended with blood on the heart side, and by applying the ligatures on veins he found that they became distended on the side away from the heart. "I remember," wrote Robert Boyle, the Irish chemist and philosopher, "that when I asked our famous Harvey . . . a little while before he died, what were the things which induced him to think of a circulation of the blood, he answered me, that when he took notice that the valves in the veins of so many parts of the body were so placed that they gave free passage to the blood towards the heart, but opposed the passage of the venal blood the contrary way, he was invited to think that so provident a cause as nature had not placed so many valves without design; and no design seemed more probable than that, since the blood could not well, because of the interposing valves, be sent by the veins to the limbs, it should be sent through the arteries and return through the veins, whose valves did not oppose its course that way." It is now known that the blood is in continuous rapid motion and makes a complete circuit of the vascular system about every twenty or thirty seconds. Harvey's theory caused a widespread controversy and was vehemently disputed by conservative medical men and anatomists; but before his death it was almost universally accepted by them. He was an eminent physician with such men as Sir Francis Bacon, James I and Charles I as patients, and is said to have confided to an intimate friend that his practice fell off materially as the result of the publication of his great work on the circulation of the blood and the ridicule heaped on him in consequence of it. In 1856 Charles Sumner, in a speech in the Senate on the antislavery movement, made the following statement: "When the great discoverer Harvey first announced the circulation of the blood, he was astonished to find that no person upwards of 40 received this important truth. It was the young men who embraced it."

Does the government pay a premium on rare coins?

The United States government does not pay or receive a premium on any issue of coins or paper currency, domestic or foreign. Persons wishing to dispose of what they consider rare and valuable coins should get in touch with private coin dealers or collectors. The government does not engage in the rare-coin business. Rumors are sometimes spread that the United States Treasury Department intends to call in certain coins and notes at a high premium. Although old issues of metal and paper money are replaced by new ones, the government

never calls in coins or paper currency for the purpose of making substitutions, and the origin and purpose of these rumors are not known. In 1929 a false rumor was started, probably as a joke, that the government would pay twenty-five cents for every Indian-head one-cent piece presented at the Chicago Centennial in 1933. Many people went to considerable pains to collect large numbers of the coins with a view to getting the government premium. In reply to to the numerous communications received as a result of the erroneous report the Treasury Department in 1930 said: "The Government pays no premium upon any issue of coins. There is no premium whatever offered by the Government on Indian-head one-cent pieces. There are millions of them in circulation." After the United States abandoned the gold standard in 1934 and devalued the gold dollar, it became illegal for individuals to own gold except in limited amounts and under specified conditions, but the government did not call in gold coins in the popular sense of that term. It was interested in controlling the gold supply and not in particular issues of gold coins.

What is burgoo?

In some parts of the South, particularly Kentucky, a burgoo picnic or feast often takes the place of the open-air party commonly known elsewhere in the United States as a barbecue. A rich savory soup or stew is made by boiling all sorts of meats and vegetables in a large outdoor kettle, seasoning the mixture with strong pepper and whisky and serving it very hot. The soup is called burgoo and the occasion a burgoo picnic. It is said that this concoction was originated and introduced into Kentucky by a Frenchman names Gus Jaubert, who was a cook in the Confederate forces of General John Hunt Morgan and who first made a burgoo for an encampment of Federal prisoners at Lexington in the fall of 1863. According to tradition, the secret of making Kentucky burgoo was handed down from Jaubert to James Looney, who became known as "the Burgoo King." On one occasion Looney served burgoo to 7,000 people at a charity race meet given at Idle Hour Farm, Colonel E. R. Bradley's estate near Lexington. One of the kettles held 400 gallons of the Kentucky concoction. In 1932 a three-year-old thoroughbred owned by Bradley and named Burgoo King won the Kentucky Derby at Churchill Downs in Louisville. Just how the odd name of the soup originated is not known for certain. As originally used in modern English *burgoo*, or *burgout* as it is also spelled, meant a kind of thick gruel consisting of boiled oatmeal porridge seasoned with salt, sugar and butter and served on shipboard

to the common seamen. *Burgout* in this sense occurred as early as 1743. Possibly it is derived from Middle English *burgout*, *burgood* or *beer-good*, "yeast," or from Arabic *burghul*, "wheat ground, dried and boiled." According to a whimsical explanation *burgoo* was suggested when a tongue-tied Civil War soldier, after sampling Jaubert's mixture, said it was "bery goo."

Who are the Walloons?

The Walloons are the inhabitants of Belgium who speak a dialect of French, as contrasted with the Flemings or people of Flanders who speak a dialect of Dutch or Low German. Most of the Walloons are Catholics, while many of the Flemings are Protestants. *Walloon* is derived from Teutonic *walk*, "foreigner," and was applied to the Celtic Belgae by their Germanic neighbors. It is related in origin to *Welsh*, the name of the Celtic inhabitants of Wales, and to *Wlachs*, the name of the inhabitants of Wallachia or Rumania. Racially the Walloons are the descendants of a mixture of Alpine Celts, Romans and Teutons. In a general way it may be said that they live in that part of Belgium west of Brussels—in the provinces of Hainaut, Namur, Liège, Luxembourg and about a third of Brabant, as well as in the adjacent skirts of Flanders and France. As a rule they differ physically from their Flemish countrymen in being taller in stature, stronger and more angular in frame, darker in complexion and more nervous and vivacious in temperament. Both the Walloon (French) and Flemish (Dutch) tongues are officially recognized in Belgium and the language question is acute in the politics of the country. In 1940 it was estimated that about three million Belgians spoke only Walloon, about the same number spoke only Flemish, while the remainder of the some eight million inhabitants of the country spoke both official languages. Although the Walloons represent only about 42 percent of the population, they are the more aggressive faction and in the past have been the dominant race politically. In the time of Emperor Charles V the Walloons sided with the Spanish in the Low Countries and it became a tradition with the monarchs of Spain to maintain a bodyguard composed entirely of Walloons. Many people have the notion that the Walloons are Protestants, owing perhaps to the fact that the Huguenot colonists who migrated to the United States from Artois, France, were so called. The Walloon Church in the Netherlands is a Protestant denomination and the members are descendants of persons of the Reformed faith who fled from France and the Walloon provinces to Holland

in 1581 and the years following. Essentially it is an offshoot of the French Protestant church, using the Geneva catechism and the French language in its services. *Walloon* seldom occurred in English literature before the beginning of the seventeenth century. In *I King Henry VI* Shakespeare says:

A base Wallon, to win the Dauphin's grace,
Thrust Talbot with a spear into the neck.

Later in the same play English Talbot tells Burgundy that by his approach "the regions of Artois, Wallon, and Picardy, are friends to us." Most of the thirty families who settled New Amsterdam (New York) in 1623 were Walloons who were sent out under the protection of the Dutch West India Company. Although they were from the Low Countries and sailed from Holland, they were really Belgians rather than Hollanders. In 1923 the United States Government issued a special postage stamp commemorating the 300th anniversary of their arrival.

How did *cock-and-bull* story originate?

A wild, extravagant, highly improbable or absurd tale is called a cock-and-bull story. The phrase was in general use in Shakespeare's time but was not used by him. "What a tale of a cock and a bull he told my father," occurs in John Day's *Law Trickes* (1608), and "Thou talk'st of cocks and bulls" in Beaumont and Fletcher's *Chances*. There are several theories as to how the phrase originated. According to one, *cock-and-bull* is a corruption of *concocted and bully*. It is said that cheap and preposterous books and pamphlets hawked about London streets were at one time known as *cocks*, which is believed to mean *concocted things*. Occasionally *cock* in that sense is still heard. *Bully* is believed to be from Danish *bulle*, "exaggerated." Possibly *bull* as applied to a grotesque blunder, as in *Irish bull*, is derived from the same source. Another theory traces *cock-and-bull* to the papal bulls issued during the Middle Ages. The edicts promulgated by the popes were called bulls from the *bulla*, or seal, attached to each document. The seal bore the impression of figures of St. Peter and a cock, an association suggested by the scriptural account. After the Reformation, it is said, any report or story that sounded incredible was compared with a papal bull and pronounced a *cock-and-bull story*. Still another theory, even more farfetched and improbable, has been suggested. Nergal was one of the most common idols of the ancient Phoenicians, Hindus and Persians, and the name means a

dunghill cock. The Egyptian bull is equally famous under the name Osiris. A cock-and-bull story may mean then, according to the advocates of this theory, a myth in reference to these mythological creatures. The French equivalent on *cock-and-bull* is *un coq-à-l'âne*, "cock and donkey." *Rooster* for *cock* is an Americanism that the British often ridicule on the ground that a cock is no more a rooster than a hen is. Our American forefathers, who sometimes carried their prudishness in words to the point of absurdity, shrank from the good old English word *cock*, which had fallen in with bad company, and substituted *rooster* for it. M. Schele de Verè in *Americanisms; the English of the New World* (1872), wrote: "Dr. Hyde Clark, perhaps too severely, calls the term *rooster* 'an American ladyism for *cock*,' and a recent English writer professes even to have heard a *Rooster and Ox* story in the United States!"

How did the willow pattern on chinaware originate?

The first chinaware bearing the popular design known as the willow pattern was made about 1780 by Thomas Turner in the Caughley porcelain factory near Brosely, Shropshire. It is supposed that the pattern was designed by Thomas Minton, a Staffordshire apprentice potter, from old blue chinaware from Canton and that the pattern illustrated a Chinese romantic legend. The designs vary considerably, but the typical plate pattern shows a house near a river on which there is a boat. An orange tree is shown beyond the house, which is enclosed on the land side by a wall and a fence. In the foreground is a bridge, with a willow tree at one end and a cottage at the other. A cottage on an island is shown in the upper left-hand corner. Two turtledoves are also conspicuous in the design. According to the generally accepted legend, the large house was occupied by a wealthy mandarin whose only daughter, Koong-se, fell in love with Chang, the mandarin's former secretary, who frequently met his sweetheart secretly under the orange trees. When the father discovered the secret affair he warned Chang never to come near the house again and built a fence across the path between the wall and the water to prevent him from entering. Koong-se was shut up in the house and betrothed to a nobleman, a wealthy friend of the mandarin who was much older than she. This was when the willow was in bloom, and the marriage was to take place when the peach tree blossomed. Chang contrived to communicate with Koong-se by means of a tiny boat that he let drift down the river with a message. While the mandarin and the nobleman were making plans for the marriage they

got drunk with wine, and Chang, disguised as a servant, entered the house and eloped with Koong-se. The drunken mandarin pursued, but the pair gained the lodge and made good their escape. This pursuit is represented in the design by three figures on the bridge—first Koong-se bearing a distaff, then Chang carrying a box of jewels that the nobleman had given Koong-se and that they took with them to pay their expenses, and last of all the mandarin with a whip. For a time the fugitives concealed themselves in the gardener's cottage, but later Chang swam across the river for a boat in which he took his bride to a distant island, where they lived happily for many years in a cozy cottage. Finally, however, the nobleman learned of their whereabouts and got permission to have Chang arrested for carrying away the jewels. Accordingly he and an armed force made their way to the island and attacked Chang, who was killed in the struggle. Koong-se immediately committed suicide by rushing into the burning cottage. But the gods of old China cursed the nobleman and made the rest of his life miserable, and transformed Chang and Koong-se into turtledoves, symbols of eternal love and union. The story, like the willow pattern itself, has many variations and refinements. Although the chinaware design dates from 1780, apparently nobody has been able to trace the legend farther back than 1849, when it appeared in an elaborate story in an English magazine called *The Family Friend*. There is no proof that it is of actual Chinese origin and it may be pure fiction, suggested by the pattern rather than the pattern by it.

How did *bitter end* originate?

A person who persists in a course to the last extremity regardless of consequences is said to stick to the bitter end, and one who is disposed to hold out to the bitter end without compromising is called a bitter-ender. Two theories have been offered to explain the origin of *bitter end*. One supposes the phrase to have been suggested by the association of *end* and *bitter* in Proverbs 5:4, which says the strange woman's "end is bitter as wormwood." The other regards it merely as a nautical phrase that has been pressed into popular service. Posts set in pairs on the deck of a ship for the attachment of cables are called bitts. The turn of a cable round a bitt is called a bitter, and the inboard end of the cable is the bitter end. In *The Seaman's Grammar* (1627) Captain John Smith wrote: "A Bitter is but the turn of a Cable about the Bits, and veere it out little by little. And the Bitter's end is that part of the Cable doth stay within board."

"We rode with two anchors ahead," wrote Daniel Defoe in *Robinson Crusoe* (1719), "and the cables veered out to the *better* end." Admiral William Henry Smith (1788-1865), in *The Sailor's Word-Book*, defined *bitter end* as follows: "That part of the cable which is abaft the bitts, and therefore within board when the ship rides at anchor. . . . And when a chain or rope is paid out to the bitter end no more remains to be let go." If this theory is correct, the underlying thought of the phrase is that when a cable is paid out to the end there is nothing that can be done. It is hard to say which, if either, of these theories is correct. The phrase seems to have originated in America only a few decades before the Civil War. Richard H. Thornton, in his *An American Glossary* (1912), cited no use of the phrase in its modern sense earlier than 1849.

Why is the witch hazel so called?

Although in America the name of a certain tree or shrub is often written *witch hazel*, the original and correct form is *wych* or *wich* hazel, the term being derived from Anglo-Saxon *wyce* or *wice*, "bending" or "drooping." This term was applied in Old English to several trees with pliant branches besides the wych hazel, such as wych alder, wych elm, etc. *Witch* in the sense of a female sorcerer is from an entirely different source. The similarity of the prefix *wych* or *wich* in tree names to *witch* led people to suppose that the trees were so named because witching or divining rods made from their twigs were reputed to be efficacious in discovering underground water and minerals.

How do an heir apparent and an heir presumptive differ?

Strictly speaking, no person has an heir until he dies, although he may have heirs apparent or heirs presumptive. An heir apparent (the term means "manifest," "obvious," "evident") is a person whose degree of relationship will make him the heir in the natural course of law provided he outlives the ancestor or possessor. His right to the inheritance is indefeasible, and if he lives long enough he will inherit without question. An heir presumptive, on the other hand, has no such indefeasible right. He is one who is at present next in the line of succession and who would inherit if the ancestor or possessor should die immediately, but whose right, expectation or hope is liable to be cut off by the birth of a person more closely related or by some other event or contingency. In other words, there is only for the time being a presumption in favor of his becoming the heir at law. The eldest

son of a hereditary king is an heir apparent, because he will automatically succeed to the crown if he survives the father; but the brother of such a king who is childless would be only heir presumptive, because he may be supplanted in the line of succession by a child born to the king. For instance, King Edward VIII automatically succeeded his father, George V, to the throne of England. His brother, the Duke of York, was only heir presumptive, because if Edward VIII had remained on the throne, married and had a direct line the Duke of York's right of succession would have been removed. There seems to be no foundation for the theory that *apparent* in this connection is not the ordinary adjective *apparent* but is derived either from *parvaunt* or *paravaunt*, "first," or from *apparente*, related." Formerly *apparent* was used as a noun in the sense of heir apparent and this obsolete usage occurs in Shakespeare's *III King Henry VI* when Edward, the Prince of Wales, says that he will draw his sword "as apparent to the crown."

How does pimento differ from pimienta?

Pimento and *pimienta* are so often confused that they are hard to differentiate. Many writers use the two terms interchangeably or use *pimento* in the sense of both, to the exclusion of *pimienta*. Originally they were applied to entirely different spices, although they were derived ultimately from the same source. In Latin *pigmentum* meant "pigment" or "paint," but in Middle Latin the term came to signify anything spicy and aromatic in allusion to the juice of various plants. The word for pepper in Spanish is *pimienta* and in Portuguese *pimenta*. In English these words became *pimento* and *pimienta*. Most of the voyages of discovery by Europeans in the fifteenth century were the result of efforts to reach the Orient without making the long overland trip across Asia through lands inhabited by hostile peoples. The first voyage of Columbus was inspired partly by a desire to obtain spices from India and China. Referring to the first visit of Columbus to Hispaniola, Washington Irving wrote: "In the pimento or red pepper which abounded in the island, he fancied he found a trace of oriental spices, and he thought he had met with specimens of rhubarb." This pimento is a mildly pungent and aromatic spice prepared from the dried, unripe berries of the pimento tree, *Pimenta officinalis*, an evergreen of the myrtle family and native to the West Indies and Central America. It was called allspice because its flavor is supposed to combine the qualities of cinnamon, nutmeg and cloves. Later it was called Jamaica pepper because the tree was

cultivated commercially on that island. Allspice is used as a seasoning in cooking and as an ingredient in medicine, but generally not in cheese. *Pimiento* (pronounced *pee-MYEN-toe*) was originally applied to *Capsicum tetragonum*, a mild, bright red, sweet pepper, which is also called Spanish *paprika*, which is derived through Hungarian from *peperi*, Greek for "pepper." Pimiento is the fleshy fruit of the Spanish paprika and is used as a vegetable, a relish, a garnish, a stuffing for olives and a seasoning in cheese. What is ordinarily called pimiento cheese should really be called pimiento cheese. Generally pimiento or pimento cheese is processed cheese made by adding Spanish sweet peppers to Neufchâtel curd, although it may also consist of cottage cheese or even hard Cheddar cheese to which paprika has been added. In the United States *pimento* is sometimes applied to a sweet-scented shrub, *Calycanthus floridus*, the wood and bark of which have a spicy flavor.

Who were the seven wise men of Greece?

Already in ancient times certain men had acquired the appellation of the seven wise men or sages of Greece. They were Thales of Miletus, Solon of Athens, Chilon of Sparta, Cleobulus of Lindous in Rhodes, Bias of Priene in Ionia, Periander of Corinth and Pittacus of Mytilene in Lesbos. Of these seven sages the physical philosopher and mathematician Thales was known as the chief. All of them, whether their actual profession was that of statesmanship, arms or learning, dabbled in poetry, philosophy and epigrams. A motto by each of them in later times was inscribed in the temple of Apollo at Delphi. The mottoes were:

Suretyship is the predecessor of ruin.—Thales

Know thyself.—Solon

Consider the end.—Chilon

Avoid extremes.—Cleobulus

Most men are bad.—Bias

Nothing is impossible to industry.—Periander

Know thy opportunity.—Pittacus

All these men died in the sixth century B.C. and the popular classification of them as the seven sages dates from that period, which accounts for the fact that the list does not include the names of ancients now better known. The names of all except Solon and Thales have been completely eclipsed by great Greeks of later periods. Nearly two centuries after the death of the last of the seven sages the oracle at

Delphi pronounced Socrates the wisest man of Greece. In commenting on the decision of the oracle the great philosopher said that if he was the wisest man of Greece it was because "I alone of all the Greeks know that I know nothing."

What is a Scarborough warning?

A warning given after striking, that is, no warning at all, is often called a Scarborough warning. How the phrase originated is not known definitely. It is believed to be associated in some way with Scarborough, a town on the coast of Yorkshire, England. Some authorities suppose it to refer to the capture of Scarborough Castle in 1557 by Thomas Stafford without warning, while others say it alludes to the fact that robbers were at one time hanged at Scarborough without the benefit of formal trial.

How did currants get their name?

However odd it may seem, the good old English-looking word *currant* is a corruption of *Corinth*, the name of a place in Greece. A variety of small dried grapes widely grown in the Levant were called *raisins de Corinthe*, "raisins of Corinth," by the French, presumably because the commercial article so designated was originally imported from that city or region. As a matter of fact, raisins made from small, seedless grapes are still an important product on the Ionian Islands and for many miles inland along the shores of the Gulf of Corinth. Raisins from Greece are still sometimes known as "currants of Corinth." During the thirteenth and fourteenth centuries these dried grapes were known in England as *raisins de Corauntz*, which was an attempt to reproduce the French name. By Shakespeare's time the word had assumed the form *currant*. In the course of time it was transferred from dried grapes (raisins) to the common garden berries of the genus *Ribes*, to which gooseberries belong, because of a fancied resemblance.

What is the grapevine telegraph?

The transmission of messages by word of mouth is known as the *grapevine telegraph*, a term that originated during the Civil War and that compared the method by which verbal news travels to the growth of a grapevine over a trellis or from tree to tree by reaching out its tendrils. The long, slender vines were, in appearance, the nearest thing in nature to telegraph wires, then a comparatively new method of transmitting messages. Reports and rumors, false or

true, travel with remarkable speed, particularly in armies and penal institutions. In his *Personal Memoirs* (1888) General Philip H. Sheridan used the term in relating the story of his famous ride from Winchester to the scene of his routed army:

We mounted our horses between half-past eight and nine, and as we were proceeding up the street which leads directly through Winchester, from the Logan residence, where Edwards was quartered, to the Valley pike, I noticed that there were many women at the windows and doors of the houses, who kept shaking their skirts at us and who were otherwise markedly insolent in their demeanor, but supposing this conduct to be instigated by their well known and perhaps natural prejudices, I ascribed to it no unusual significance. On reaching the edge of the town I halted a moment, and there heard quite distinctly the sound of artillery firing in an unceasing roar. Concluding from this that a battle was in progress, I now felt confident that the women along the street had received intelligence from the battlefield by the *grapevine telegraph*. and were in raptures over some good news, while I as yet was utterly ignorant of the actual situation.

So many of the rumors afloat in both Federal and Confederate armies pertained to battles never fought and victories never won that grapevine telegraph dispatches fell into disrepute and *grapevine* became synonymous with "canard" or "a false report started to delude the public." Nevertheless the grapevine telegraph, the speedy exchange of information by word of mouth, remains one of the essential channels of news in every country and community. Much of our information still reaches us "via the grapevine." The grapevine telegraph is especially important among a people living under military occupation, where all ordinary means of communication are either suppressed or greatly restricted.

How did hammock originate?

Hammock in the sense of a hanging or swinging bed of canvas or netting is derived from *hamaca*, a Spanish rendering of the Carib Indian name of a tropical tree. The natives of the West Indies and Central and South America used the bark of this tree in making their suspended cots. In the narrative of his first voyage Columbus wrote: "A great many Indians in canoes came to the ship today for the purpose of bartering their cotton, and hemacas, or nets, in which they sleep." Washington Irving in his life of Columbus also referred to these hammocks. Writing of the natives of the island of Exuma in the West Indies he said: "For beds they had nets of cotton extended from two posts, which they called *hamacs*, a name since in universal

use among seamen." Similar hanging beds had been used on ship-board by European sailors since ancient times. Plutarch says that Alcibiades "caused the planks of his galley to be cut away, that so he might lie the softer, his bed not being placed on the boards, but hanging upon girths." Before they picked up *hammock* from the Spanish the English had called such devices "Brassil beds." In time *hammock* came ashore and established itself in English in the sense of any swinging bed or couch. In the southern states, especially Florida, *hammock* is applied to slightly raised areas where hardwood vegetation grows and where the soil is deeper and richer in humus than the flatlands or pinelands. The term in that sense is a variation of old English *hummock*.

What town lies inside the crater of a volcano?

Leverock's Town, commonly known as the Bottom, a town on the island of Saba in the Dutch West Indies, is one of the strangest communities in the world. It is built on the crater floor of an extinct volcano and can be entered from the shore 800 feet below either from Ladder Bay on the west by means of a stairway known as the Ladder, consisting of hundreds of steps cut in the solid rock, or from Fort Bay on the south by means of what is known as the Fort Road. The island, which because of its peculiar shape has been nicknamed "Napoleon's Cocked Hat," has an area of only about six square miles and is merely the top of a rocky volcanic peak or cone rising abruptly from the sea to a height of more than 3,800 feet. It lies about eighteen miles northward of St. Eustatius in the Leeward group and, like that island and the islands of St. Martin, Aruba and Bonaire, is part of the Dutch colony of Curaçao, although the inhabitants, who number about 1,800, are virtually independent, having been exempted from taxation in 1932. The sovereign of the Netherlands appoints the governor of the colony of Curaçao, who in turn appoints lieutenant governors for the five islands composing the colony. Three-fifths of the Sabans are white and the other two-fifths are of Negro or part Negro blood. The whites are believed to be descendants of Scotch, English, Dutch and Scandinavian sailors and boat carpenters who settled there during the seventeenth century, when Saba was used as a base by the Caribbean pirates and buccaneers. It is probable that most of the first settlers were Scots. They speak English but teach both Dutch and English in their schools. Even at the present time seamanship is the means of livelihood for many members of this interesting community. The others subsist by cultivating vegetables

and fruit and by fishing. The island has no harbor where a vessel can anchor with safety at all times, and all articles imported and exported, including the lumber for the houses, are carried over the steps in the cliff by colored porters. The women of Saba produce a great deal of fine Spanish needlework, which finds a market in the United States and elsewhere. Who first settled the island, when the Dutch acquired it and how it got its unusual name are all unknown. That the present inhabitants are descended from a comparatively few families is indicated by the fact that there are only about fifteen surnames on the island. Of these the most common are Simmons, Hassell, Johnson, Every, Gordon and Sagers.

How did *ostracize* originate?

Ostracize, which now generally means to exclude from social privileges by common consent, is derived from Greek *ostrakon*, the term applied by the ancient Greeks to the potsherds, fragments of pottery, tiles of earthenware or tablets of burnt clay used in voting to banish citizens regarded as dangerous to the state or otherwise politically objectionable. It is believed that in primitive times pieces of bone or the shells of oysters, snails and mussels were used as ballots and that *ostrakon* originated as a corruption of *osteon*, "shell" or "bone." The oyster was called *ostreon* from its shell. Ostracism as an institution was introduced in Athens about the sixth century B.C., soon after the fall of the Pisistratus family of tyrants. It was a political device whereby those in authority might induce the populace to remove temporarily from the city persons whose influence was dreaded. Some of the greatest men of Athens, including Aristides, Themistocles, Alcibiades, Miltiades and Cimon, were formally ostracized. A citizen could not be banished or ostracized for more than ten (later reduced to five) years, and at the end of that period he was permitted to return and enjoy his estates and civil privileges. Often men were ostracized for what they might do rather than for what they had done. In Athens no citizen could be ostracized unless at least 6,000 duly qualified citizens took part in the proceedings, and an ostracized person could be recalled in the same way. If the Assembly decided that a person was dangerous to the public welfare a general meeting of the citizens was held and the ballots (*ostrakons*) were deposited in a place appointed for the purpose. There was no trial as such, no formal charges, no prosecution or defense and no presentation of evidence. Those favoring ostracism wrote the objectionable person's name on the potsherd ballot before casting it; those opposed cast the

ballot without any inscription. If the vote was in the affirmative the ostracized citizen was given ten days to settle his private affairs. This institution was finally abolished toward the end of the fifth century B.C. by Alcibiades, who himself had been a victim of it. Plutarch says that one Athenian citizen voted to ostracize Aristides, the personification of probity, because he had become tired of hearing the soldier and statesman referred to as "the Just." The inhabitants of ancient Syracuse, a Greek city on the site of the present Italian city of the same name in Sicily, had a method of banishment known as petalism. When a citizen was suspected of having dangerous influence or ambitions the people held a meeting and voted on the question of whether he should be banished from the city for five years. The method was similar to the ostracism of Athens, but it was called petalism because the Syracusans used olive leaves or petals instead of shells for ballots.

What does a *Roland for an Oliver* mean?

A Roland for an Oliver means "blow for blow," "tit for tat" or "giving as good as one gets." The phrase alludes to two semilegendary knights in Charlemagne's time who are the heroes of many exaggerated romantic tales. Roland, who in real life held the office of warden of the Breton marshes, figures in the legends as the son of Charlemagne's sister Bertha. Most of the stories about him are more fable than fact. He is represented as a sort of superknight, gigantic in stature and redoubtable in battle, and as the chief Christian champion against the Saracens. Legend has it that at first Oliver was his chief adversary and that finally the two met in single combat on an island in the Rhine and fought for five days without either gaining the least advantage. A heroic friendship then developed between them and ever after they were inseparable companions in arms. What Roland did Oliver could do, and what Oliver did Roland could do. They were a match for each other, alike in virtue, courage and deeds of derring-do. The prowess and warlike qualities of the two knights are referred to by Shakespeare in *I King Henry VI* where the Duke of Alençon says:

Froissart, a countryman of ours, records,
England all Olivers and Rolands bred
During the time Edward the Third did reign.

The real Roland was in command of Charlemagne's rear guard when he was compelled to retreat from Spain in 778 A.D. At Roncesvalles

in the Pyrenees Roland and the flower of the Frankish knights were ambuscaded and slain by the Gascons who had revolted. One legend has it that Roland escaped from the ambushade but died of hunger and thirst in the mountains while trying to return to France. *A Roland for an Oliver* is used in reference to an action taken in retaliation or something done or said to match the exploit of another. When one person tells a cock-and-bull story another gives a Roland for an Oliver by telling one just as incredible. This latter sense of the term may have been influenced by the fact that the old romancers went to such extremes in exaggerating the tales about the two knights. One story has it that at the battle of Roncevalles the bugle of Roland could be heard nearly a hundred miles away.

What is a gigolo?

Gigolo is a slang term of French origin and, as now generally used, means a young man who lives on the money of a woman older than himself, or a man whom a woman pays to escort her to places of amusement and to dance with her while patronizing public tea-rooms, cafés, cabarets, hotels, restaurants and night clubs. In other words, as now used in English a gigolo is a young male who makes a profession of dancing with, escorting and entertaining females past the prime of life. In French *gigolo* is pronounced *ZHEE-go-lo*. The common pronunciation in English is *JIG-o-lo*. This term acquired its present meaning in a roundabout manner. Originally *gigolette* was employed in France to designate a flapper or a young girl of marriageable age, but gradually it came to signify a concubine, prostitute or woman of bad repute. Some scholars have attempted to identify the word with Old French *gigue*, a fiddlelike musical instrument, or with *giguer*, "to play," "frolic," "romp," "gambol," "hop" or "dance." *Gigue* in this sense is the source of English *jig*. Whatever the ultimate source of *gigolette*, its masculine counterpart *gigolo* was first applied to the companion of a *gigolette*, and by extension to a lover, paramour or man who lives upon the earnings of a professional prostitute. French *gigue* was also applied to a long-legged, gangling girl, and in Middle English *gigge* or *gig* signified a wanton girl. In the centuries immediately preceding the Elizabethan period *giglet*, *giglot*, *gigglet*, *gigglot* and *giglote* were in common use in the sense of a giddy, frolicsome or romping girl or a lewd woman. *Gigletry*, *giglotry* and *gigly* were employed in reference to lasciviousness irrespective of sex. In *Hamlet* the Prince of Denmark says to Ophelia, "you jig [gig], you amble, and you lisp," where *jig* or *gig* means to walk

wantonly. "Away with those gigglets too," says Escalus in *Measure for Measure*, and in *I King Henry VI* Joan of Arc quotes Talbot's son as saying, "Young Talbot was not born to be the pillage of a giglot wench." Some lexicographers believe these archaic forms were related to Italian *giglio*, "lily."

Why are some girls called flappers?

Flapper in the slang or colloquial sense of a girl of a certain type came into general use in the United States between 1912 and 1920. It occurs many times in Harry Leon Wilson's *Bunker Bean*, first published in 1912. The author has Bulger say: "See the three skirts in the back? That's the Missis and the two squabs. Young one's only a *flapper*, but the old one's a peacherine for looks." Later, according to the novelist, Bunker Dean "saw that she was truly enough a *flapper*; not a day over eighteen, he was sure." The term was further popularized in 1920 when *This Side of Paradise* and *Flappers and Philosophers*, two books by Francis Scott Fitzgerald, were published. *Flapper* originated in England and was introduced into America with a somewhat altered meaning. In England the term was applied colloquially to a young girl, a girl not yet "out" or an unmarried girl of presentable manners and appearance from about sixteen years upwards. Literally a flapper is something that moves with a loose, flapping motion. Accordingly, some authorities suppose, the English called a girl a flapper from the large bow often tied to her hair, which flapped about as she moved. It may be, however, that *flapper* in this relation was suggested by *flapper* in the sense of a fledgling bird. In British sporting slang a flapper is a young partridge, wild duck or other game bird that has wings but is not yet able to fly, being able merely to flap. According to the Oxford dictionary, the term has been used in that sense since 1773 at least. Before the First World War it was applied in Britain to a subdebutante, that is, a young, unsophisticated girl. During that war it was employed to denote young girls who defied convention by bobbing their hair, dressing in boyish costumes, smoking cigarettes and substituting for men in driving trucks and doing other "man's work." This led many to suppose that flappers were so called in allusion to the flapping of their bobbed hair and the motion of their jaws while chewing gum. *Flapper's delight* was Tommy Atkins' name for inferior officers or subalterns who prided themselves on their popularity with flappers. In the United States *flapper* was applied to sophisticated, venturesome girls who went to extremes to attract attention, particularly in matters of dress. During

the nineteenth century *flapper* had been applied to young girls of questionable morals. For instance, in *Passing English of the Victorian Era*, James Redding Ware defines *flapper* as "a very immoral girl in her early teens."

Why is a card game called poker?

The paternity of *poker* is obscure. The game and its name in the present form are probably of American origin. Both appeared on the American scene as accomplished facts in the 1830's. Jonathan H. Greene's *Reformed Gambler* (1858) referred to a poker game supposed to have been played on a Mississippi flatboat in June, 1834. As early as 1836 *poker* was defined as the name of a "favorite game of cards at the South and West." Several theories have been advanced to account for the origin of both the game and the term. The Oxford dictionary says the popular American card game is "a variety of Brag, played by two or more persons, each of whom, if not bluffed into declaring his hand, bets on the value of it, the player who holds the highest combination of cards as recognized by the game winning the pool." In 1855 George Eliot wrote: "One night we attempted Brag or Pocher." In Germany a somewhat similar bluffing and betting card game of considerable antiquity is called *Pochspiel*, from *Pochen*, signifying literally "to knock" or "to rap" and figuratively "to boast" or "to brag." The German name of the old game is supposed to have been suggested by the fact that a player when passing would say *Ich poch* and rap on the table with his knuckles. In *Americanisms; the English of the New World* (1872) M. Schele de Vere wrote: "Another such game is known as *Poker*, evidently a distant relative of *poke* and the French *poche*, representing what in other games is called a pool. Like its near cousin, suggestively called *Bluff*, poker is a mere hazard game, with which, however, is combined great skill in bragging to a purpose." Fred C. Kelly quotes George Ade as saying that poker is the "only game in which courage so often triumphs over intelligence, guided by caution." French *poche* means "bag" and is the source of English *pocket* and *pouch*. Apparently Schele de Vere assumed that the bank, kitty or pool was called *poke*. One theory is that German *Pochen* was spelled *poqué* by the French at New Orleans and that through the pronunciation *poe-kay* it was corrupted into American *poker*. It has been suggested that a card game known in the seventeenth century as *post* and *pair* was the forerunner of poker and that *poker* itself is merely a corruption of *post* and *pair*. In that game the hands of three cards were dealt to two or more players

and the holder of the highest pair won. In Dutch, *pokker* means "devil" and during the period when the game of poker was developing and acquiring its name, *poker* in the sense of "hobgoblin" and *pokerish* in the sense of "alarming" were current in the United States. One notion is that poker was so called because it was at first the "favorite card game of Western gamblers" and therefore a devilish game. But these are only theories unsupported by etymological evidence. It is often said that poker is merely the old Persian card game of *as nas*, but the similarity between the two games is not striking. Perhaps the American inventors of poker unconsciously borrowed features from *as nas* as well as from brag, post and pair, primero, Pochspiel, poqué and others. Naturally all games played with cards have features in common. The name may have been suggested by some circumstance now lost beyond recovery. Poker has contributed to everyday speech many words and phrases, such as *passing the buck*, *chip in*, *cash in one's chips*, *ante up*, *fourflusher*, *poker-faced*, *show-down*, etc.

What is the national emblem of Canada?

The maple leaf is the emblem of the Dominion of Canada, not by act of Parliament or any other official body, but by popular consent. Hard or sugar maple trees grow in profusion in southeastern Canada. Nation-wide maple-leaf contests are held in the Dominion and the winning leaf has been as large as twenty-one by twenty-two inches in dimensions. Tradition says that on one occasion during the War of 1812 a regiment of British soldiers in Canada camouflaged their scarlet jackets by carrying sprays of maple leaves. Fifty years later a cluster of three maple leaves was adopted as the device of the regimental colors of a Canadian corps known as the Prince of Wales Regiment. The maple leaf has a conspicuous place in the coat of arms of Canada but does not feature prominently in the great seal, although it appears in the shields of the provinces of Ontario and Quebec, which form part of the great seal. The Union Jack has always been regarded as the official flag of Canada; but since about 1874 what is popularly known as the red ensign has been used by Canada when it was desirable to use a distinctive flag. The red ensign consists of a red banner containing the Union Jack and the coat of arms of Canada. Soon after the outbreak of the Second World War the Dominion adopted a battle flag to be carried by her fighting men. It consists of a silver field, with the Union Jack in the upper left-hand corner next to the staff, with the gold fleur-de-lis of French

Canada in the upper right-hand corner and with three maple leaves in the main and central position. Australia, New Zealand and the Union of South Africa all have adopted distinctive national flags, and it is probable that the Dominion of Canada will sooner or later follow suit. Apparently most Canadians favor a distinctive national flag, but there is a difference of opinion as to what design should be adopted. The controversy hinges on whether the Union Jack should be included as part of the design. All designs that have been suggested have included a maple leaf or a cluster of maple leaves.

Is it illegal to mail chain letters?

Chain letter is commonly applied to a prayer or good-luck message containing a threat of misfortune or bad luck to the recipient if he breaks the chain by failing to send copies to others. There is no federal law prohibiting chain letters per se, but the United States Post Office Department for many years has discouraged the practice of mailing even harmless and innocent chain letters and has repeatedly advised the public to ignore such letters. Originally chain letters were objected to by the postal authorities on the ground that they were bothersome rather than illegal. But most chain letters violate the postal lottery regulations and fraud statutes. Authors and senders of chain letters holding out the prospect of great misfortune for recipients who fail to carry out the directions are subject to prosecution under the statutes and regulations forbidding the sending of threats through the mails. Chain letters containing schemes for collecting money, selling merchandise or distributing things of value through the circulation of coupons, tickets, certificates, introductions and the like are interpreted as violating the postal statutes and regulations against lotteries. Such letters designed to raise money even for charity or patriotic purposes are forbidden. In 1942 the postmaster general declared that chain letters asking five persons to buy defense savings stamps and to send them to five other persons were forbidden and the senders subject to the penalties imposed for violations of the frauds and lottery provisions of the statutes. This scheme, however, contained a pay-off that involved the element of chance. Conducting a lottery of any kind through the mails is classed as a felony and is punishable under federal law by fines and imprisonment. Whatever the purpose, the postmaster general asserted, chain letters of this type are forbidden. Harriet Beecher Stowe, author of *Uncle Tom's Cabin*, wrote and authorized the circulation under her name of a chain letter to raise money for a church in Florida. Some chain cards

and letters are designed merely to spread propaganda. In 1939 somebody started a chain of postal cards asking people to write to the White House protesting against a third term for President Roosevelt. "Endless group letters" and letters of the "family bundle" type—letters to which each recipient adds matter before sending it to another member of the group or family—are not illegal. Obviously it is difficult to trace the anonymous originators of chain letters. Such devices thrive on a species of superstition that is almost impossible to eradicate, and hundreds of thousands of chain letters are sent every year notwithstanding they are continually condemned by religious, educational and fraternal leaders. Some of these letters may be sent in a spirit of fun, but the majority of them are mailed because the senders actually fear that misfortune will befall them if they break the chain. Often the names of well-known persons are attached to chain letters to give them an air of authenticity. One of the most famous of all chain letters purports to have been written by Jesus just before the crucifixion and deposited by him beneath a stone at the foot of the cross. The receiver of the letter is enjoined to send copies of it to ten others on pain of misfortune and bad luck. Compliance promises good fortune. A chain letter that circulated widely for many years after the First World War is known as the "Flanders Chain of Good Luck." It reads, in substance, as follows: "This letter was sent to me and I am sending it to you. Do not break the chain. Send this and three copies within 24 hours to three friends whom you wish good luck and see what happens to you on the fourth day. This chain was started June 20, 1920, in Flanders by an American Army officer and will go around the world three times. Whoever breaks this chain will have bad luck. It is wonderful how this prediction is fulfilled."

What is a dunker?

Dunker literally means "dipper," being derived from German *tunken* or *dunken*, "to dip." In a slang and humorous sense a dunker is one who dips his bread, doughnuts or other food in his coffee, tea or milk while eating. Members of the quaint and interesting denomination of German-American Baptists known as Dunkers or Dunkards are so called because of their peculiar practice of triune or triple baptism by immersion. Translated into English the name would be Dippers, and that name is sometimes applied to the Dunkers. In this denomination only adults are baptized and the candidates are dipped face forward at the mention of each name of the Trinity—

Father, Son and Holy Ghost—given in the baptismal formula in Matthew 28:19. Like many other sects the Dunkers acquired their popular name as the result of ridicule heaped upon them by their enemies. Among themselves they are known simply as the Brethren. The Dunkers came into existence as a separate church in 1708 when eight German Pietists went from the house of a miller named Alexander Mack at Schwarzenau in the province of Westphalia to the Oder River and were baptized by triune immersion, lots being cast to determine which member of the group should baptize Mack, who in turn baptized the other seven and became the first minister of the congregation. Mack, though the first minister, is not regarded by the Brethren as the founder of the denomination in the generally accepted sense of the term. Units of Dunkers were later organized elsewhere in Germany and adjoining countries. In 1719, owing to persecution by the state churches, the Dunkers began to emigrate to America. The first Brethren to leave the homeland embarked from Crefeld under the leadership of Peter Becker and settled in Germantown, near Philadelphia. It was some time before the Dunkers effected a satisfactory organization in the New World. Secessions from the mother body began at an early date. One of the leaders, John Conrad Beissel, withdrew and founded a monastic community at Ephrata in what is now Lancaster County, Pennsylvania, and in this movement the small sect known as "*Seventh-Day German Baptists*" (not to be confused with the Seventh-Day Baptists) had its origin. In 1733 Alexander Mack himself arrived in Philadelphia with about sixty families from Europe and reinforced the original Dunkers, who adopted the name German Baptist Brethren. Thus the very nucleus of the denomination was transported to America, and what became of those Dunkers who remained in Europe is not known. In Pennsylvania the Dunkers flourished and from there spread first to Maryland, New Jersey and Virginia and then to other sections of the country. One of their number, Christopher Sauer, in 1743 printed at Germantown in German the first Bible printed in the United States in a European language. Though the Dunkers and Mennonites have much in common, they are entirely distinct and separate denominations and the latter is much the older of the two. In the main the tenets and practices of the Dunkers are those of the Baptists, but they, like the Mennonites, are often called German Quakers because they emphasize simple living, plainness in speech and dress and nonconformity with accepted social customs. The church, which is governed by a general conference, has bishops,

elders, ministers in the first and second degree, deacons and teachers. Dunkers accept the Bible, in its original form, as the literal, final and infallible revelation of God's will and the New Testament as their only rule of faith and practice. They "lay on hands," wash one and another's feet before the Lord's Supper, anoint with oil and are opposed to divorce, warfare, litigation of any kind, the use of tobacco and intoxicants, oaths and secret societies. They carry their religious practices into all the activities of daily life, refusing to do as the Romans do merely because they are in Rome and taking little or no part in political affairs. Internal dissensions resulted in a division into several sects. In 1848 a group withdrew and organized the Church of God, or New Dunkers. Another group, who regarded the mother church as too progressive, withdrew in 1881 and formed the Old German Baptist Brethren or Old Order Brethren, which is composed of the ultraconservatives of the denomination. The next year a number of Dunkers who had been expelled from the mother body for being too progressive joined with others who withdrew voluntarily and formed the Brethren Church, or Progressive Dunkers. At the annual conference in 1908 the mother church or Conservative Dunkers abandoned the name German Baptist Brethren and adopted Church of the Brethren as the official name of the sect. The census of religious bodies taken in the United States in 1926 gave the Dunkers 1,279 congregations with a total membership of more than 158,000, and the great majority of these were members of the Church of the Brethren or Conservative Dunkers. One of the most interesting early statements about the Dunkers occurs in Benjamin Franklin's *Autobiography*. The Quakers in Pennsylvania in Franklin's time wanted to help put the colony in a state of defense against foreign aggression, but their articles of faith forbade it and outwardly they had to oppose all military measures. This led the great philosopher to observe:

These embarrassments that the Quakers suffer'd from having establish'd and published it as one of their principles that no kind of war was lawful, and which, being once published, they could not afterwards, however they might change their minds, easily get rid of, reminds me of what I think a more prudent conduct in another sect among us, that of the Dunkers. I was acquainted with one of its founders, Michael Welfare, soon after it appear'd. He complain'd to me that they were grievously calumniated by the zealots of other persuasions, and charg'd with abominable principles and practices, to which they were utter strangers. I told him this had always been the case with new sects, and that, to put a stop to such abuse, I imagin'd it might be well to publish the articles of their belief, and the rules of their discipline. He

said that it had been propos'd among them, but not agreed to, for this reason: "When we were first drawn together as a society," says he, "it had pleased God to enlighten our minds so far as to see that some doctrines, which we once esteemed truths, were errors; and that others, which we had esteemed errors, were real truths. From time to time He has been pleased to afford us farther light, and our principles have been improving, and our errors diminishing. Now we are not sure that we are arrived at the end of this progression, and at the perfection of spiritual or theological knowledge; and we fear that, if we should once print our confession of faith, we should feel ourselves as if bound and confin'd by it, and perhaps be unwilling to receive farther improvement, and our successors still more so, as conceiving what we their elders and founders had done, to be something sacred, never to be departed from."

This modesty in a sect is perhaps a singular instance in the history of mankind, every other sect supposing itself in possession of all truth, and that those who differ are so far wrong; like a man traveling in foggy weather, those at some distance before him on the road he sees wrapped up in the fog, as well as those behind him, and also the people in the fields on each side, but near him all appears clear, tho' in truth he is as much in the fog as any of them.

How do chocolate and cocoa differ?

The beverages known as chocolate and cocoa are both made from the seeds or beans of the cacao plant, an evergreen tree native to tropical America. Cocoa is made from cacao beans from which part of the fat or cocoa butter has been extracted. Chocolate differs from cocoa in being richer in fat and somewhat harder to prepare. Often no distinction is made between these beverages and in many eating places a customer gets the same drink whether he orders cocoa or chocolate. *Chocolate*, *cacao* and *cocoa* are all derived through Spanish from the Aztec name of the bean. Cacao played an important part in the economy of Mexico before the Spanish conquest. Only the upper classes of the Aztecs were permitted to drink *chocolatl*. Montezuma himself drank his from a golden goblet with a spoon of tortoise shell. Cacao beans served as a medium of exchange and tribute was paid in them. A value equivalent to about one cent was arbitrarily set upon each bean by the Aztec government. The Indians cured the beans by sun-drying. To some extent the Aztecs ate their money. According to Aztec mythology, cacao was brought to Mexico by Quetzalcoatl, god of the air, and accordingly Linnaeus named it *Theobroma cacao*, the first word being Greek for "food of the gods." Of the cacao bean an early Spanish chronicler wrote. "It is the best merchandise that is in all the Indies. It goes for money in any market or fair, and may buy

flesh, fish, bread, or cheese, and other things." Cortez introduced chocolate into Spain, whence it spread to the rest of Europe and the world. In 1657 a London shop began to sell chocolate at fifteen shillings a pound. The Aztec drink became fashionable and several chocolate shops developed into famous clubs for political and literary discussions. White's Chocolate House and the Cocoa Tree Club rivaled the famous coffeehouses in popularity. Chocolate for beverage purposes was first manufactured in the United States near Dorchester, Massachusetts, in 1763. In 1876 a Swiss named M. D. Peter perfected a process of making "eating chocolate" by combining the cacao nib, fat, condensed milk and sugar. Now chocolate is an ingredient of about half of all American candy and is widely used in custards, puddings, pastry, cakes, ice cream, sauces, mousses, frappés and many other things good to eat. At present French West Africa is the largest producer of cacao beans and the United States is the largest user. The cacao tree, which grows from twenty to forty feet high, bears buds, flowers and seed pods all at the same time. The pods grow directly on the trunk and larger branches instead of on the twigs. Each pod contains from thirty to fifty almond-shaped seeds, which are cured and roasted by many different methods. The name of the plant and of the uncrushed seeds is still usually spelled *cacao* (*ka-KAY-oe*), while the names of the processed products are spelled *cocoa* and *chocolate*. These words are not related in origin to *coco* in *coconut*, with which they are often confused. *Coco* is a Portuguese word meaning "bugbear" and it is believed that coconuts were so named from the "monkeylike" face at the base of the nut. Confusion with *coco* in *coconut* and *coco fiber* was probably responsible for the English corruption of *cacao* into *cocoa*. A similar but unrelated word is *coca*, the name applied to the dried leaves of a South American shrub, which is the source of the drug cocaine. *Coca* is used as a tonic and chewed by the natives of the Andes to impart endurance.

Can fleas actually be trained?

To what extent, if any, fleas can be trained or educated is a disputed question. Probably no insect is susceptible of any appreciable degree of training or education. Experiments show that cockroaches will refrain from entering sections of an enclosure where they have been frequently shocked by electrical charges. Fleas are probably not capable of much more training or teaching than that. Most of the antics that these tiny insects go through in flea circuses are the result of their natural efforts to escape or the ingenious devices and methods

of the trainer. Tradition says a Russian professor, condemned for life in a Siberian lead mine, first attempted to train fleas, to while away the tedium of exile. He later escaped to France and produced a sensation in Paris by exhibiting his trained pets. The first trained fleas seen in America were exhibited in 1821 by a man named Ruhl. Since then a number of persons, including Professor J. C. Ruhl of New York, grandson of the first exhibitor in America, have made the exhibition of fleas their means of livelihood. Fleas, of which hundreds of species are known in different parts of the world, are more or less parasitic, living by sucking the blood of human beings, animals and birds. They are found on nearly all animals and birds and cannot reproduce without the blood of a host. Fleas are really wingless flies modified for a bloodsucking and parasitic life. Their metamorphosis, which requires from four to six weeks, is complete, consisting of the larvae, which feed on organic refuse, the pupae enveloped in silky cocoons and the perfected adults, which may live from a few weeks to an entire season. Most species are very small, but the giant fleas on the Greek island of Cylades are a fourth of an inch long. In America the species most commonly met with is the cat and dog flea, while in Europe the species that prefers human blood is more common. This latter species, *Pulex irritans*, is the one generally exhibited in flea circuses. The insects are kept alive by being permitted to suck their natural food from the arm of the trainer. Though similar to the males in appearance, the females are stronger and more active and accordingly are used for exhibition. The males, as a rule, are not only smaller and weaker than the females but also indifferent toward becoming "educated" and therefore are seldom made to perform. Their inability to fly is offset by their extraordinary leaping powers, made possible by the longer and stronger rear pair of legs. They travel tail first and land facing the direction from which they came. The average weight of a "human flea" is from 0.05 to 0.1 of a grain, but the insect is remarkably agile and is probably the strongest creature for its size. A flea can move a weight hundreds of times heavier than itself. It can jump a distance 200 times its own length. The average female can jump straight up from five to eight inches and forward (or backward!) from ten to thirteen inches. If a man could jump as far and as high in proportion to his size as a flea can, he could jump over the Washington Monument. Of course, this comparison is fallacious, because a flea is so small that its body meets with little air resistance. The jumping ability of the flea was noticed by the ancients and is alluded to in some of the earliest litera-

ture extant. Four centuries B.C. Aristophanes, the Greek comic poet, related in *The Clouds* the following colloquy that took place in the "thinking-house" of Socrates and some other philosophers:

Student: 'Twas Socrates was asking Chaerephon,
How many feet of its own a flea could jump.
For one first bit the brow of Chaerephon,
Then bounded off to Socrates' head.

Strepsiades: How did he measure this?

Student: Most cleverly,
He warmed some wax, and then he caught the flea,
And dipped its feet into the wax he'd melted;
Then let it cool, and there were Persian slippers;
These he took off, and so he found the distance.

In our own time the distance a flea can jump became of considerable importance to medical science. The theory was advanced that the bubonic plague or black death, which once nearly unpeopled Europe and still takes a heavy toll of life in the Orient, was spread, not from man to man by direct contact, but from flea to rat, from rat to rat, and from rat to man. It was in 1906 that the plague appeared in San Francisco and threatened the entire country. Experiments to determine the jumping distance of fleas tended to confirm the theory and the plague was stopped by exterminating the rats. The "bite" of a flea is actually a puncture of the skin rather than a bite in the general sense. It is now known that not only bubonic plague but also typhus fever and other deadly diseases are spread by fleas and their hosts. The jumping and acrobatic propensity of the flea makes it difficult to manage and train. As previously indicated, the so-called education of fleas depends more on the ingenuity of the trainer and the clever stage property than on the intelligence or instinct of the subject. The first step in the process is to convert the jumping insect into a walking or crawling one. Fleas are easily killed and must be handled with great care. One way to break the insect of the jumping habit is to give it free range in a glass globe where it jumps and bumps its head until it tires out and resorts to crawling. Another way is to suspend it with its feet barely touching the floor. Then comes the delicate operation of harnessing. Using a pair of small tweezers and working under a magnifying glass the trainer puts a thin collar around the flea's neck. Gold is usually used for the collar because it is malleable, durable, flexible and does not tarnish.

In flea circuses the insects, by means of this collar, are made to draw tiny carriages, chariots and cannon, to turn merry-go-rounds, walk tightropes, throw objects several times their own weight, kick balls, wave flags, fence with foils, juggle, jump through loops, dance to music, etc. The fleas are also "dressed like dolls." Some of these performances are real; others are merely tricks of the trainer. The fencing is accomplished by fastening the flea to a tiny chair and gluing or otherwise attaching the foils to its front feet. Placing two of the tiny creatures face to face thus equipped creates a comic effect, their motions being entirely the result of their efforts to release themselves. Flea trainers are generally secretive about their tricks, but it is suspected that the insects are sometimes made to dance by heating the surface of the stage or charging it with electricity. A flea can be completely "educated" in a couple of weeks and it seldom lives more than a month or two in captivity. Some trainers, by retaining the same names but not the same insects, create the impression that their fleas live for years. In 1939 a professional flea trainer in South Africa tried to insure his fleas with Lloyd's. He was told that the premium would be \$100 a day for each \$500 worth of fleas because the insurance companies had nobody who could tell the age of a flea with certainty.

When were adhesive postage stamps first used?

The first adhesive stamps were probably made experimentally in 1834 in the printing shop of James Chalmers at Dundee, Scotland. Postage-stamped envelopes were tried by M. de Velay, owner of a private post in Paris during the reign of Louis XIV. About 1716 stamped covers for mail matter were tried in both Italy and Spain. M. de Chambouset, owner of a private post in France, issued to his customers printed postage slips to be attached to letters. About the time Chalmers was printing his experimental stamps an English schoolmaster named Rowland Hill (1795-1879) happened to be at an inn when the innkeeper's daughter received a letter. The girl examined the letter carefully and asked how much the postage was. When the carrier said it was a shilling she professed not to have the money and returned the letter to him, whereupon the schoolmaster gallantly stepped forward and paid the charge. After the carrier had gone the girl told Hill she was sorry he had paid the postage and explained that she and her lover in a neighboring town had an arrangement by which they wrote messages on the outside of letters and sent them through the mails without paying the postage. This set Hill to thinking of a method whereby postage could be paid in advance and

greatly reduced. He thought it was a pity that a girl had to pay a shilling to receive a message from her lover or to resort to such a trick to avoid paying. In 1837 he published *Post Office Reform*, in which he advocated a uniform postage rate between all places in the British Isles. Among other things Hill said in his pamphlet: "Perhaps the difficulties might be obviated by using a bit of paper just large enough to bear the stamp, and covered at the back with a glutinous wash which, by applying a little moisture, might be attached to the back of the letter." He thought the rate should be one penny (two cents) for letters not weighing more than one ounce. In 1838 the House of Commons appointed a committee to determine the best method of charging and collecting postage. Hill proved by figures that the high postage rate then in effect could be reduced to a penny for two-sheet letters from London to Edinburgh by using a "pasted label." In 1839 he was attached to the Treasury Department to carry out his proposed reforms. The committee, under the leadership of Henry Cole, enlisted the services of many of the best designers and engravers in Great Britain, who designed, engraved and printed the now famous penny postage stamp bearing a profile of Queen Victoria. These adhesive stamps were put on sale May 6, 1840. On the first day, according to Cole's report, 12,500 pounds worth of the stamps were sold and more than half the letters mailed that day were stamped. The historian William Lecky says the "stamp act of 1840 must be deemed one of the most momentous legislative acts in the history of mankind." People soon fell into the habit of calling these adhesive labels stamps because they contained the stamp or mark of the Post Office Department. Sir Henry Bessemer, a prolific inventor best known for the Bessemer process for making steel, invented movable dies for embossed stamps. At first the stamps were printed in large sheets, without any provision for separating them easily, and they were cut with scissors. Since the seller was responsible he usually cut them himself and sometimes even put them on the letters as a precaution against loss. It was not long before the sheets were perforated. Rowland Hill lived to receive the freedom of the City of London, to be given \$25,000 by the people and to be knighted. Brazil was the second country in the world and the first in the Western Hemisphere to adopt adhesive postage stamps. The Brazilian "bull-eyes" stamp appeared August 1, 1843. Adhesive postage stamps were adopted by Russia in 1845 and by Switzerland in 1846. At first the United States government was unwilling to go to the expense of making a general issue of postage stamps, but permitted some cities

to issue their own. The first adhesive postage stamps used in the United States were issued by the City Dispatch, otherwise known as Greig's Post, established in New York City January 1, 1842. Annapolis, Maryland, issued the "bald-eagle" stamp in 1846. United States postage stamps were first authorized by an act approved March 3, 1847, and placed on sale in New York City July 1 of the same year. In the next 100 years the United States printed 666 billion stamps in 700 different designs and in denominations ranging from half a cent to \$5.00. In 1845 the United States postage rate on a one-sheet letter varied from six cents for 30 miles to twenty-five cents for 400 miles. It cost twenty-five cents to send a one-sheet letter to the most distant zone, fifty cents to send a two-sheet letter, and so on. In those days postage was collected in money directly from the sender or from the recipient when the mail was delivered. High rates and the charge for extra sheets caused many people to write in a very small hand and probably contributed to the forming of the characteristic handwriting—a finely etched script—of the period. In 1845 the rate was reduced to five cents for a half-ounce letter for 300 miles or less and ten cents for any greater distance. Six years later the rate was fixed at three cents for half an ounce for letters sent less than 3,000 miles and six cents for greater distances within the United States. In 1883 it was reduced to two cents for a half-ounce for letters sent less than 3,000 miles, and two years later it was reduced to two cents an ounce, the equivalent of the British penny postage rate of 1840. The United States adhesive stamps of 1847 consisted of two denominations, five-cent stamps bearing a portrait of Benjamin Franklin and ten-cent stamps bearing that of George Washington. These stamps were made under contract by Rawdon, Wright, Hatch & Edson, of New York, and bore the initials of R. W. H. & E. on the lower edge.

Why were covered bridges covered?

Just why so many old-time wooden bridges in America were covered is a question that has never been answered to the satisfaction of everybody. Probably the reasons were not entirely practical. Most of the roofed bridges in the Northeast were built in the eighteenth and nineteenth centuries, although a few may have been built as early as the seventeenth century. Many of the pre-Revolutionary road builders merely followed earlier European practices in making bridges and it is possible that they hardly knew themselves just why they covered them. The roof on bridges may have been an architectural survival. A covered bridge over the Reuss River at Lucerne, Switzerland, is be-

lieved to date back to 1332. Referring to the time of Numa Pompilius about 700 B.C., Plutarch wrote: "The sacrifices performed on the bridge were among the most sacred and ancient, and the keeping and repairing of the bridge attached, like any other public sacred office, to the priesthood." At one time virtually every bridge in Europe had a tollhouse. During the Middle Ages many bridges were built and maintained by *Fratres Pontis*, "the Brethren of the Bridge," an order of Benedictine monks. A regular feature of these bridges built by the clergy was a chapel. A few bridges with chapels on them still exist in England and on the continent. Bridges then as now were of strategic importance in war and some were constructed like small fortresses so they could be defended against enemies with primitive weapons. In 1940 there were still more than 2,000 covered bridges of the old style in the United States and Canada. There were 600 in Ohio, 336 in Pennsylvania, 202 in Indiana, 200 in Vermont, 200 in North Carolina, 89 in West Virginia, 42 in South Carolina, 23 in Illinois, and many others in Massachusetts, New York, Virginia and other states. There were a few even in the states west of the Mississippi, including one in California. Many of them are no longer in use. Their usefulness survives longest on little-traveled country roads. Some years ago the United States Bureau of Public Roads asserted that such timber bridges were constructed with roofs and sides to protect them from the weather. According to that agency, effective housing usually adds many years to the useful life of wooden bridges, which is borne out by the fact that most of the surviving covered bridges are among the oldest bridges in use. Formerly timber was cheap in many sections of America and it cost very little extra to roof a bridge. It seems hardly probable that bridges were covered, as some have supposed, to provide shade and shelter for man and beast, although they occasionally served that purpose. A favorite theory among those who like to speculate on the purpose of the roofs on bridges is that they were covered to induce livestock across streams. The roof and barnlike appearance of the bridge, it is said, prevented skittish horses from shying at the sight of water on both sides of them, and it would be easier to drive sheep, hogs and cattle across a covered bridge than across an open one. The trouble with this theory is that not all the wooden bridges on the way to market were covered, and besides, this purpose would have been served just as well by a sided bridge without a roof. Another theory is that the bridges were covered and inclosed to prevent snow from drifting on them and making them impassable. But in the North snow often piles up at each end of covered bridges,

and such bridges were constructed in Virginia, North Carolina, South Carolina and elsewhere in the South where snowfall is comparatively light. At one period bridges were built in New England with flat roofs. Later they were covered with gabled tops like the sloping roofs of farmhouses and barns because snow sometimes piled up and broke the flat roofs and water leaked through from rain and melting snow to the harm of the timbers and flooring. Some of the early wooden bridges were built without the use of a single nail, the timbers being cut in such a way that wooden pegs were sufficient to hold them in place. The covered bridge has often been the subject of songs, stories and pictures. George Taylor Blowman (1869-1932), American artist, made many etchings of covered bridges. Often when it is necessary to replace a covered bridge with a modern structure public sentiment requires that the old covered bridge be removed to another site and kept as a landmark. Occasionally a new structure is built in imitation of the picturesque covered bridge. In *The Golden Legend* Longfellow wrote:

The grave itself is but a covered bridge,
Leading from light to light, through a brief darkness!

Can fish survive being frozen in ice?

Some species of fish can survive being frozen in ice. Fish behave in low temperatures somewhat like reptiles, amphibians and other so-called cold-blooded creatures and their usual body temperature is little higher than that of the medium in which they live. When the temperature of the water falls low enough all activity in a fish ceases. Resuscitation after suspended animation is called anabiosis. Whether a fish can survive being frozen in solid ice depends on the species, the length of time it is frozen and the conditions under which the ice melts. The great rivers of Siberia—the Lena, Yenisei and Ob—freeze solid in winter and the fish thus imprisoned in the ice are believed to “hibernate.” If fish did not have the ability of anabiosis the streams of Siberia would have no fish, when, in fact, they have an abundance of them. Most species of fish die if they are frozen even for a short time. Ordinary goldfish have been known to live after being frozen in a cake of ice for several hours. Among the first experimenters on this subject was Sir John Franklin (1786-1847), British explorer in northern Canada, who resuscitated fish that had been stiffened by cold. A French biologist named Weiss wrote: “One is able to freeze fishes, to transport them even at 15 degrees, and to see them revive if precaution is taken to thaw them out gradually.” Pectet, a Swiss naturalist, described his researches on the subject as follows: “The most

convincing results have been furnished by the fresh-water fishes. They can be frozen and thawed out without their dying. One day at the University of Geneva I placed in a deep glass bowl 28 fish. By taking the precaution to leave them nearly 24 hours in water at zero we were able to slowly freeze this water, to form a block composed of ice and the fish inclosed therein. The block was frozen gradually, from nearly 20 degrees to below zero. Three weeks to two months later, by allowing the ice and the fish inclosed to melt slowly, the latter swam about as before without any sign of discomfort." The black-fish (*Dallia pectoralis*), a small fresh-water food fish abundant in the tundra country of Alaska and Siberia, is the hardiest known species in this respect. It can survive being frozen in or out of water for months. In *Contributions to the Natural History of Alaska*, published in 1886 under the auspices of the Army Signal Corps, L. M. Turner wrote of this remarkable fish: "The mass of fish in each basket is frozen in a few minutes; and when required to take them out they have to be chopped out with an axe or beaten with a club to divide them into pieces of sufficient size to be fed to the dogs or put into the pot to boil. The vitality of these fish is astonishing. They will remain in these grass baskets for weeks and when brought into the house and thawed out they will be as lively as ever. The pieces which are thrown to the ravenous dogs are eagerly swallowed; the animal heat of the dog's stomach thaws the fish out, whereupon its movements soon cause the dog to vomit it alive. This I have seen, but have heard some even more wonderful stories of these fish." Since then several scientists have frozen Alaskan blackfish in refrigerators and thawed them out months later to find them apparently unharmed by the experiment. Other fish can live in remarkably high temperatures. A species found in hot springs in Ceylon lives in water at a temperature of 115 degrees Fahrenheit, and it is said that a desert minnow lives in hot springs in the West where the temperature of the water is 125 degrees.

What are the Cinque Ports?

The Cinque Ports are a group of ancient seaports on the coast of Sussex and Kent in southeastern England. The name, pronounced *sink ports*, is an Anglo-French term meaning "five ports" and was originally applied to Hastings, Sandwich, Dover, Romney and Hythe. Owing to their position in respect to the continent they were the five most important maritime towns in the kingdom. It is supposed that even as early as the time of Edward the Confessor they were granted certain tax exemptions and other privileges in exchange for their defense of the English Channel. About the time of the Norman Conquest these

seaports were formed into a corporation or association with many important privileges and franchises. In return they were obligated to give the king certain sea services, consisting chiefly of men and ships for the national defense in the event of war. In fact the quasi-privateers furnished by the Cinque Ports comprised virtually all the navy England had until the time of Henry VII. The *Great Harry*, a three-masted man-of-war built in 1488, is believed to have been the first ship that belonged to the Royal Navy. In 1278 Edward I granted the "sink pors" a charter confirming their privileges. At that time they had to provide fifty-seven ships in time of war. Later the two "ancient towns" of Rye and Winchelsea were added to the association, and many minor unincorporated and incorporated towns were made dependent on the original Cinque Ports. Finally the total number reached thirty-nine, but the group continued to bear the misnomer Cinque (five) Ports. The lord warden of the Cinque Ports had extensive powers, most of which have been annulled. In *Henry VIII* Shakespeare employed *Cinque Ports* in the sense of the "Barons of the Cinque Ports." Even at the present time the lord warden, who is admiral of the ports and constable of Dover, has a shadow of authority and honor and a certain amount of admiralty jurisdiction, and the quaint courts of the ancient towns meet occasionally. Certain salvaging cases were the last to be handled in recent years. At present there are sixteen barons of the Cinque Ports, who wear gold and scarlet robes when they meet on ceremonial occasions. In 1941 King George VI as a mark of honor appointed Winston Churchill lord warden of the Cinque Ports, among the perquisites of the office being "the flotsam, jetsam and lagan" within the jurisdiction of the ports. The official residence of the lord warden—Walmer Castle near Dover—was opened to the public in 1905. In one of its rooms the Duke of Wellington died in 1852.

When was *France* dropped from the British king's title?

A connection between England and France began in 1066 when William the Conqueror became king of England and remained duke of Normandy. During the reigns of the Norman and Plantagenet kings the various royal and noble families of the two countries were closely connected by intermarriages, which resulted in English claims to possessions in France. Edward III, king of England from 1327 to 1377, had a slender claim to the French throne through his mother, and he was the first English sovereign to pretend to be king of France as well as of England. In 1340, at the beginning of the long series of wars known as the Hundred Years' War, Edward III began to style him-

self king of England and France. In the end, however, Edward III renounced his claim to the French throne for possession of Aquitaine in France. Henry V, king from 1413 to 1422, revived the English claim to the French throne and invaded France to enforce his right. After defeating the French in a series of campaigns he married Catherine, the French king's daughter, and agreed to rule France in the name of her father, whose successor he was named. England lost most of its possessions in France during the reign of his weak son, Henry VI, who was proclaimed king of France as Henry II. In 1558 a French army commanded by the Duke of Guise captured Calais and Guînes in Normandy from the English. This was the last vestige of English dominion in France and the only pretext the sovereign of England had to styling himself king of France. A treaty signed in 1559 at Câteau Cambresis by France, Spain and England after the Battle of Gravelines is known in history as *Paix Malheureuse*, "the Disastrous Peace," because by it France ceded the Low Countries and Savoy, Corsica and 200 forts in Italy to Spain, and England surrendered Calais to France. After that Dunkirk was the only point in France ever held as an English possession. Turenne's victory of the Dunes in 1658 resulted in the return of Dunkirk to France, which in 1659 returned it to England. In 1662 Charles II, being in financial straits, sold Dunkirk to France for 250,000 pounds sterling. Notwithstanding this fact, the English sovereigns continued to be styled king of France for 139 years longer. George III was the last sovereign of Great Britain to be so styled. When Great Britain and Ireland were united January 1, 1801, the British claim to sovereignty over France was abandoned and *France* was dropped from the official title of the king and the fleurs-de-lis, the lilies of France, were removed from the royal arms of England. The official appellation of the British sovereign has been altered several times since then. In 1876 *Empress of India* was added to the royal appellation. After the death of Queen Victoria the title became "by the Grace of God of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas King, Defender of the Faith, Emperor of India." The London Imperial Conference of 1926 recommended a change in the language of the royal title, and in 1927 Parliament enacted that the title be, "by the Grace of God, of Great Britain, Ireland and the British Dominions beyond the Seas King, Defender of the Faith, Emperor of India." In 1947, after India had been partitioned into the dominions of India and Pakistan, it was announced from the royal palace in London that *Emperor of India* had been dropped from the king's title.

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